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GOD'S FAILURE OR MAN'S FOLLY?

A CHALLENGE TO THE PHYSICALISTIC INTERPRETATION OF MAN

by

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SCI-ART PUBLISHERS
HARVARD SQUARE
CAMBRIDGE, MASS.

MCMXLIX

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To

My Wife

Julia Christina Lundholm

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PREFACE

BETWEEN MAN and the distant stars lies a vast orderly Universe. In the latter, Man monopolizes a singularly unique position: of all its tenants, he alone has some insight into the orderliness of his own gigantic abode. Therefore, he also dimly surmises the Creator of It All: The Supreme; that intuition brings him nearer to the latter than any other being and makes him well-nigh the crown of existents.

Man's insight into the universal order admits as one of its parts his comprehension of his own nature, the knowledge which, set into a system, constitutes the Science of Man. That science has many aspects; three of them — more than others — are indispensable: (1) the Biology of Man; (2) the Psychology of Man; and (3) the Philosophy of Man. They overlap; each one, though, has its own cardinal aim of emphasis.

The Biology of Man treats of him as a living physicochemical organism, of his vital processes and of his evolution as a complexity out of a simplicity. The Psychology of Man treats of him as a living mind; it examines his conative acts and the relation of these to his acts of experiencing; this includes the study of his achievements throughout his course of cultural evolution. The Philosophy of Man pursues the exploration of his role in a progressive universal event; such a pursuit irrevocably involves reflections upon Man's relation to the physical world as well as reflections upon his relation to the Supreme.

A comprehensive Science of Man is bound to take heed alike of the biological, the psychological, and the philosophical consideration. But for that, no description of Man can be more than fragmentary.

The present work is a humble attempt to describe Man by focusing upon him — in a balanced measure — the luminous beams of the three-cornered convergent inspection. It typifies a broad approach to human study — an approach which endorses, neither that the vast orderly Universe be reduced to an elevated running-maze, nor that Man himself be represented by a white rat.

HELGE LUNDHOLM.

Durham, North Carolina
January 3d, 1949

PART I

THE MEANING OF THE TITLE

CHAPTER I

God's Failure or Man's Folly?

SEVERAL YEARS AGO, a book was written upon problems of aesthetics. Its author was an amateur in many fields and with the courage of the dilettante he had speculated widely and afar. He had even outlined a metaphysics. It happened that in his metaphysical scheme there was a place for a supreme actuality or being — a God, if you will. But that God was abstractly conceived and had not even the dimmest resemblance to the anthropomorphic God taught by the ordained administrant of the Gospel — it was, if ever, a philosopher's God. Its position in the metaphysical system was such as to make it a *logical* possibility — no more — that the intuition of so many creative geniuses of their work being inspired by a power beyond be true. To the author that was but a logical corollary of certain premises; as a reality, he never either affirmed or denied it. It was to him but an item of mentation. A certain commentator on his work wrote to the effect that, since he had accepted Divine inspiration as the mainspring of aesthetic creation, his work deserved no consideration by science. That was the Alpha and Omega of the critic's comment.

The title of the book before you is: *God's Failure or Man's Folly?* It refers to the Old Testament story of man's creation by God. Warned by the example of the author on aesthetics I hasten to submit that this reference is only distantly symbolic. I am writing neither on religion nor on ethics but on the psychology and philosophy of man. In no literal sense do I accredit the Biblical myth of creation; indeed, in due time I shall propose a theory of creative evolution which makes the "ascent of man" not independent of a supreme spiritual actuality but, to be sure, independent of any anthropomorphically conceived Deity. What may be true, however, is that many great myths of man tell us something eminently important about man. Sigmund Freud thought that the Greek myth of Oedipus attested a general psychological truth: the libidinal and so incestuous love-tendency of the human boy-infant toward its mother. That supposition and its elaboration by Freud and his disciples are beyond the scope of our present considerations. To us, is pregnant the appraisal of another myth.

Thus reads, on man's creation, the first chapter of *Genesis.* "And God said, Let us make man in our image, after our likeness. . . . So God created man in his *own* image, in the image of God created He him. . . ."

What important message concerning man is contained in that great biblical myth? There may be many, but the most salient one would seem to be that man of God's image shared with his prototype the power of creativeness. The biblical God, his very essence, was creativeness. That faculty was God's basic gift to man, his image. It shall be our task to substantiate, in the terms of present-day psychology, that this be true. *Man's greatness and uniqueness is his creativeness;* not that he — like the biblical God — creates an organized world out of nothing, but, rather, that by organizing and re-organizing that which exists he kneads the substances of nature into his servants and, in his highest manifestation of creativeness, into objects of beauty. In that measure does he mirror the God of the myth.

Man's dignity has been debased by two agencies both of contemporary breed but of all but ageless ancestry: totalitarian political ideology, on the one hand, and materialistic (physicalistic) psychology and philosophy, on the other. With the former we are not here directly concerned; with the latter we are. How sprung and waxed the idea of conceiving man merely in the terms of physical-chemical theory? The reply to that question calls for the consideration, on the one hand, of the history of human science and, on the other hand, of the psychology of the savants.

The human recognizable mind, *i.e.*, the mind as immediately known by itself and naïvely projected into other selves, tended in the past to be identified with the human soul. To the concept of the soul were attached properties like: divine origin, capacity of survival after bodily death, even immortality. These attributes of souls were matters of religious faith not requiring empirical verification. As science gradually emancipated itself from religion, it came to treat with suspicion everything that could not be verified — so the souls. But, the eviction of the souls was not so easy. Oftentimes, it conflicted with the genuine faith of the savant; at all times it provoked the power of exorcism of the church. Sir Isaac Newton, the documents tell us, was a profoundly religious man with faith in God, the Creator, as well as in the immortality of the soul. Though these beliefs would seem incompatible with his mechanistic interpretation of the universe, he upheld them without a question. Like Sir Isaac, many great scholars of the past and even a few of the present have succeeded in maintaining their religious faith and their scientific conviction, as it were, in logic-tight compartments: other thinkers of rank have failed to achieve such a state of "normal schizophrenia." In modern time a solution of the soul-mind dilemma was essayed by splitting off from the traditional soul-concept the recognizable mind, and by ousting the soul while retaining the recognizable mind. The mind, thus extirpated from the soul, loses the properties of immortality, of divine origin, even of power of limited survival after bodily death; in that manner reduced, it becomes equivalent to the psychological self that strives, knows and feels. But, the psychological self, too, was evicted after its phenomenal reality had been questioned. All but two hundred years ago, David Hume wrote: "For my part, when I enter most intimately into what I call *myself,* I always stumble on some particular perception or other of heat or cold, light or shade, love or hatred, pain or pleasure. I never can catch *myself* at any time without a perception, and never can observe anything but the perception. When my perceptions are removed for any time, as by sound sleep, so long am I insensible of *myself,* and may truly be said not to exist. And were all my perceptions removed by death, and could I neither think, nor feel, nor see, nor love, nor hate after the dissolution of my body, I should be entirely annihilated; nor do I conceive what is further requisite to make me a perfect nonentity. If any one, upon serious and unprejudiced reflection, thinks he has a different notion of *himself,* I must confess I can reason no longer with him. . . . I may venture to affirm of the rest of mankind that they are *nothing but a bundle or collection of different perceptions* which succeed each other with an inconceivable rapidity, and are in a perpetual flux and movement."[1]

Since, in this manner, the psychological self was lost in the flux of sensations and perceptions which, to David Hume, constituted the phenomenal world, it has been about exiled from academic psychology during two centuries. Not entirely, though, for the psychological self continued to live in the thought of the Scotch School of Common Sense Philosophy and in that of a few partisans of the school down to our time. Thomas Reid, the father of the School, revolted against the scepticism of David Hume; the substance of his revolt was sustained by Dugald Stewart, Thomas Brown, and Sir William Hamilton. Later, the tradition continued — or, at least, its influence is definitely felt—in the works of James Ward, G. F. Stout, Sir Charles Sherrington, William McDougall and Samuel Alexander; the most recent adherence to the tradition is reflected in my own writing.

Hume's refusal to vision the psychological self might have been a matter of intellectual snobbishness on the part of a very young man, of a desire to paint a picture different from the rest. The continued exile of the self from so much academic psychology since Hume has other grounds.

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[1] David Hume, *Treatise on Human Nature,* London: Longmans, Green, 1878. Vol. I, Pt. IV, sec. 6, p. 534.

Physics and, in a less measure, chemistry have selected from the world of experience essentially such items as can be directly or indirectly quantified. Experimental procedure in these sciences as a rule sooner or later boils down to a pointer-reading. By the use of experimental procedure and of mathematical elaboration of quantified items, the physico-chemical sciences reached the highly self-consistent concept of the energy-scheme, that vast continuum of energy-systems ever and always in close functional inter-commerce. The sciences proper attempted so far as possible to keep man (the psychological self) debarred from their domain. This is how they came to treat percepts — largely the visual percepts — as things, disregarding the double determination of all human experience by a physical situation, on the one hand, and by an observing, searching (conating) mind or self, on the other. The magnitudes of the physical sciences were not entirely divested of disjunctive properties as are those of mathematics, the queen of all sciences; only then do they approximate that state of abstraction when ultimately reduced to elements of motion or to quanta of energy aloof. ". . . The perceptible is the subject matter of Natural Science," writes Sherrington, "and the perception-process it uses is of course human perception . . . Science, none the less, is anxious that the human viewpoint as part of Nature observing other Nature should not distort that other Nature more than need be. . . . Science desires to rid itself of anthropisms as unnecessary. . . . Man as scientific observer becomes an instrument for pointer-readings in the hand of a disembodied intellect."[2]

Physics and chemistry, not dealing with experience for the sake of understanding man, could justly disregard the double dependence of experience. Psychology, it would seem, cannot properly entertain the same disregard. Nevertheless, much contemporary psychology did do exactly that.

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[2] Charles S. Sherrington, *Man on his Nature,* New York: Macmillan, 1941, pp. 360-62.

A little more than a century ago, psychology faced a crisis and a great upheaval: it fought what it believed to be its war of liberation from philosophy. No armistice was ever signed but, as the flame of debacle died down, psychology found itself in an even more fatal captivity, the captivity of the physical sciences. A strangely domesticable nestling, it flew from cage to cage. Its new prison was not recognized an oubliette, for, in the great revolution against philosophy, a throne had been overturned, ravaged and burned: the armchair — symbol of reflection. In that fire were lost psychology's insight, foresight and farsight — indeed, its *amour propre.* It began confidently and blindly to mould itself upon the pattern of physics, a pattern naturally alien to it.

Like the percepts of the physicist, the consciousness of the psychologist became reified, made into things: here it became a static mosaic, there a stream or flux, but always — in "scientific" psychology's first era of infancy — a mosaic or flux of elements, sensations — the homologues of the physicist's atoms. Then came wholism (*Gestaltism*) defying the early atomism in psychology but still absorbing courage from newly discovered facts and laws of macroscopic physics. Consciousness no longer was analyzed into elements called sensations; rather, it was conceived in the terms of configurations that spontaneously segregated and grouped themselves as wholes in an autogenic autochtonous phenomenal world of their own. Psychology, in its alleged maturity, however, reaped new emasculation. Consciousness, it was felt, is after all subjective and not an item for science; so, it became ousted from the citadel of academic psychology within whose walls was now legalized no study but the study of overt recordable behavior. Psychology thought this its greatest emancipation while, in reality, it was its most inglorious captivity. Physics, in the meantime, had invented increasingly subtle instruments and methods of recording events; psychology began to utilize these, recording *behavior* under strictly controllable simple laboratory conditions which were mostly wide afar from the real conditions of practical life. As a consequence, psychology's aula became more and more seated not with far-sighted scholarly thinkers but with near-sighted trained technicians. Neatness of method, at the expense of import of goal or aim, rose into an autotelic value.

There are two logical errors which have been the scourge of human thought down the ages, the one an error of elation, the other an error of depression. The terms *elation* and *depression* are used because each of the errors seems to suggest its own respective philosopher's neurosis. Some sciences considering themselves rightly successful have essayed to pretend their laws and principles to be the sole entia of the universe; and so, in the history of human thought, we encounter a variety of biased natural philosophies: physicalistic philosophies, mentalistic philosophies, philosophies even advocating that the universe consists of sheer appearances. Any one of these philosophies has committed the grave logical error of identifying a part with the whole of which it is a part. No conclusion reached through consideration of only a small number of items can be properly applied to all of that exhibit of abundancy from which they have been extricated. The error would seem one of superiority-feeling or monomanic elation.

There is another well-nigh as severe logical error committed by other sciences. Contrary to the error of elation, it seems an error of inferiority-feeling or depression. These sciences, having been profoundly impressed by the success of a fellow science or even merely by its seniority of birthright, have felt themselves humble and inadequate; meekly, they have then attempted to apply to the natural topics of their own domain the laws, principles and techniques of that fellow science. They have even gone to the length of disregarding in the world of experience items that rightly belong to them because these items have refused to be subsumed under the laws and principles of the "master science" and to be studied by the techniques of the latter. Such a procedure necessarily leads to hybrid science or — why not? — quasi-science.

I have called each of these unwarranted trespasses into foreign soil a philosopher's neurosis. Etiological, oftentimes, is an infatuated craving for monism, a craving that brings out the inimitable conflict: *bias versus fact.* In case, by *a priori* conviction, one is oriented toward monism — since empirical, unbiased observation does not bear out the uniformity of all things such an orientation is of the order of faith — then, it is relatively easy to reach one's destination assuming one is willing to pass by half or perhaps more than half of nature's marvels. Whitehead, himself bent toward monism, nevertheless, to his everlasting credit, warns us of the broad and easy road. ". . . It is easy enough," he writes, "to find a theory, logically harmonious and with important applications in the region of fact, provided that you are content to disregard half your evidence. Every age produces people with clear logical intellects, and with the most praiseworthy grasp of the importance of some sphere of human experience, who have elaborated, or inherited, a scheme of thought which exactly fits those experiences which claim their interest. Such people are apt resolutely to ignore, or to explain away, all evidence which confuses their scheme with contradictory instances. What they cannot fit in is for them nonsense. An unflinching determination to take the whole evidence into account is the only method of preservation against the fluctuating extremes of fashionable opinion. This advice seems so easy, and is in fact so difficult to follow."[3]

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[3] Alfred North Whitehead, *Science and the Modern World,* New York: Macmillan, 1931, p. 268.

Having once and for all burned the armchair — symbol of reflection — psychology seems to have taken pride in philosophical illiteracy. It claimed itself to be "factual" rather than reflective or interpretative — forgetting that not even the simplest statement of "fact" can be made without that statement implying a position to the ontological problem (the problem of the nature of reality), on the one hand, and the epistemological problem (the problem of the nature of knowledge), on the other. Hypothesis, however, was not entirely abandoned for the benefit of factual description. But, the average psychologist was satisfied when, on selected evidence, he could build a little system of hypotheses which — to speak metaphorically — hung isolated in the space-time of thought bridging neither backward toward the origin nor forward toward the future of things. Such a limitation of reflection violates what may be called *the first law of scholarly ethics,* a law which to the philosophically minded intellect has attained the dignity of a categorical imperative. It reads: *know the implications of your own expressed opinions even to the most distant, or n^{th}, level of discourse;* that n^{th} level is bound to be the metaphysical level. Psychology's asthenia, the sequela of its disregard of the first law of scholarly ethics, however, was looked upon not as a weakness but as a virtue.

On psychology's abhorrence of philosophy a contemporary biochemist, A. D. Ritchie, a scientist of rank who happens also to be a philosopher, makes the following comment: "At the risk of misunderstanding and unpopularity I would maintain . . . that psychology, a large part of it at least, must be intimately connected with philosophy, as in the past. It may be thought that the pupillage of psychology to philosophy was merely a misfortune of youth, that as soon as she was grown up and had a technique of her own, like the other sciences, she would escape from these step-motherly hands. I believe this is a mistake, and the two are inseparable. There are two philosophical problems that are also psychological, the problem of knowledge and the problem of conduct. . . . Sooner or later, if . . . [the psychologist] does his work thoroughly he gets involved in philosophy. If he supposes he is not so involved it is because his philosophy is unconscious. Great as the virtues of the unconscious may be, it is not the best place for keeping philosophies."[4]

Ritchie, no doubt, is right; a philosophy is implied in any one of the doctrines any one contemporary school of psychology declares its own and attempts to defend at the cost of others. The same is true of all sciences. Most of the "subconscious philosophies" of contemporary psychology are of the type that is symptomatic of the depressive neurosis. Psychology has chosen as its own quantifiable items of the world of experience similar to those which the physical sciences selected — not so much because these items were especially relevant to the study of man but, rather, because they could be handled by the methods of these sciences; in these methods — all but to the exclusion of others — psychology developed an unshakable confidence. Thus, psychology lost cognizance of its own great and worthwhile goals, instead, giving itself to the exercise of certain practices moulded upon the ones of physical sciences: experiment, measurement, and the elaboration of quantifiable data by relatively simple mathematics (mostly statistics). Sherrington in a passage quoted tells us how the natural sciences proper have attempted to keep man out of their inquiry. This, as physicochemical sciences, they may rightly do. But, for the psychological science, supposed to develop a systematic understanding of man, to attempt the same — how inappropriate, indeed! Nevertheless, that is, it would seem, what much contemporary psychology has done. It has become a quasi-science of man bedeviled by a phobia of man. Man's knowledge of man is anthropoid. How, man being the anthropos, could it possibly be otherwise? Physical sciences, not essentially concerned with man, ruled out of their scope the following item in the world of experience: the psychological self that wills or intends purposive acts and that in pursuing its goals is guided by experience — that psychological self which in the course of its own intended acts suffers affect: joy, anger, fear, tender emotion, pleasure, pain, hope, anxiety, and despair; that self also which, in its highest flight of activity, is capable of free creation beyond any adaptive requirements, and of apprehending values. All that was ousted by physics and much contemporary "scientific" psychology followed step. In the citadel of scientific psychology — after such a sifting — what remained? Little, indeed, of that which is uniquely human, of that which is the very flavor and salt of man. My brief appraisal of much contemporary psychological science is not so much a criticism as a diagnosis of an infirm condition; it is void of intended arrogance and it is submitted with malice toward none.

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[4] A. D. Ritchie, *The Natural History of Mind,* New York: Longmans, Green, 1936, pp. 180-181.

The psychological science has been thought pillared in the biological sciences, on the one hand, and in the social sciences, on the other. Be that so, the social sciences proper are far less puritanical in their concepts and tastes than much contemporary psychology; they endorse, in the world of experience, man's purposive action and his guidance by experience; they also admit of emotion a role in unifying men with men as well as a role of dividing men against men. There is, however, as yet in embryo, a puristic movement in the social sciences. It is in search of a uniform frame of reference for all the social sciences. Though oftentimes intentionally hidden, the ultimate physicalistic model is felt. Expressions like "social forces," "economic forces," and others are nevertheless revealing. The most promising attempt is probably the "group-dynamics" of Kurt Lewin, whose untimely death at the very height of maturity and efficiency is deeply to be deplored. Lewin treats the individual group as part of a larger social field; group action results from stresses and tensions in that field. Lewin's social philosophy is claimed to be psycho-physically neutral; in describing field-events, he uses a mathematical language borrowed essentially from topology and vector theory. The group-dynamics tends to minimize the fact that a group, after all, is an assembly of individuals who cooperate in the pursuit of a common goal. Any one group might then conflict with other groups assuming that the respective group-goals are incompatible. The recognition that the events of group-activity ultimately depend upon individuals in action is of eminent concern when we consider the moral education of individual men. McDougall once introduced the concept of a "group-mind." He admits, however, that the group-mind is merely a metaphor to denote organized cooperative action of individuals under leadership.

We are still awaiting what Lewin's "group-dynamics" has in store. It issued from or it is, at least, in harmony with a desire on the part of some logicians to develop a methodological-conceptual unity of all sciences. Such a unity would seem nice and academically clean-cut, but, I fear it might be potentially dangerous. A unity of all the sciences as an ideal is apt to intimate that everything in nature for science to credit is of one kind. Such an intimation could well-nigh become fatal to scientific progress. For, it would be likely to lead to the error Whitehead has pointed out: the disregard of more than half of Nature's evidence; the search for a methodological-conceptual monism can hardly escape implying the ontological monism which unbiased empirical observation does not seem to support. On the other hand, if methodological-conceptual monism does not imply ontological monism, one might rightly ask what its virtue or significance be.

Considering the psychology of the psychologist, one is reminded of some words the late William McDougall wrote only a few years before his death and after having devoted a lifetime to the study of man. ". . . I am struck by the fact of the extreme youth of the authors of many works that rank high in history. Berkeley and Hume were little more than schoolboys when they propounded their brilliant but absurd 'idea psychologies.' Bain and Herbert Spencer produced their principle treatises in their middle thirties. Wundt, far better prepared than most, began publishing his psychology in his twenty-sixth year. Külpe wrote his *Grundriss* in his thirtieth year. Dewey, his *Psychology* in his twenty-seventh, Thorndike made his classical experiment and fixed his all-too-simple principles in his twenty-fourth year. Titchener became head of a laboratory at twenty-five and forthwith began to force the Wundtian psychology on a long procession of students. The last case is particularly illustrative of the point I wish to make. If this ardent student had spent ten or fifteen years in preparation for his task, working in biological laboratories and playing with children and madmen and savages and animals of all sorts, he might as well have made a very much better contribution to his chosen field. For the promotion of psychology requires (in a much higher degree than any other science) a mature mind, mature in two senses; mature with a degree of openness and wisdom which a young man, however brilliant, can hardly achieve; and mature in the sense of having made much varied and intensive study of many branches of science and philosophy."[5]

Only posterity can make an estimate of to-day like the one McDougall made of yesterday. This much, however, can be said about the present, that psychology has opened its playgrounds to thousands of volunteers who are very young. That statement, perhaps, applies especially to our country (the United States) where so frequently chronological age and maturity do not seem to follow step. Babbitt, throughout his life, was a big boy who outgrew little but his infant clothes; he was a businessman — the average businessman on a medium scale — active, but not reflective.

---

[5] William McDougall, "Experimental Psychology and Psychological Experiment." *Char. and Pers.*, I, 3, 1933, pp. 212-13.

Our youth is relatively healthy — sports has much contributed to that — but, perhaps, a little shallow; it conspicuously prefers action to meditation. It is doing things and looking forward to doing things on the good faith that action — no matter what kind — is in itself a virtue. To do things is, as it were, an end in itself; one consideration, though, is likely to remain eminent: to do things on the largest scale ever done. Such an attitude might promote rapid progress, but, a progress by trial and error and so a progress with much waste. We venture that waste is mostly the result of lacking reflection admitting, at the same time, that undue reflection might cause wasteful deliberation. This means that there is an optimal combination of action and reflection which is likely to lead to the most economical advancement.

It is very far from my intent to draw an unduly derogatory picture of our American youth. In support of my appraisal, I tender a passage from recent literature, a passage that is moderate, sympathetic and to the point. The general setting of the dialogue to be quoted is as follows: Larry Darrell, the hero of the narrative, has been to war. Distressing war-experience, especially the discovery that "the dead look so awfully dead," has given to his mind a reflective turn, urging him to probe even into the ultimate questions of God's existence and of the survival of the soul. Though he is an American lad, in his tendency to meditation he is atypical. Larry is engaged to Isabel, a typical American girl of the ever-active, non-reflective sort. He has expressed his desire to postpone their marriage in order that he might live in Paris and study. The following conversation takes place in that city where she has come with the intent of persuading him to return to the U. S. A., which he refuses to do. Isabel speaks first.

> "How long d'you think all this is going to take you?"
>
> "I wouldn't know. Five years. Ten years."
>
> "And after that? What are you going to do with all this wisdom?"
>
> "If I ever acquire wisdom I suppose I shall be wise enough to know what to do with it."

> Isabel clasped her hands passionately and leant forward in her chair.
>
> "You're so wrong, Larry. You're an American. Your place isn't here. Your place is in America."
>
> "I shall come back when I'm ready."
>
> "But you're missing so much. How can you bear to sit here in a backwater just when we're living through the most wonderful adventure the world has ever known? Europe's finished. We're the greatest, the most powerful people in the world. We're going forwards by leaps and bounds. We've got everything. It's your duty to take part in the development of your country. You've forgotten, you don't know how thrilling life is in America today. Are you sure you're not doing this because you haven't the courage to stand up to the work that's before every American now? Oh, I know you're working in a way, but isn't it just an escape from your responsibilities? . . . What would happen to America if everyone shirked as you're shirking?"
>
> "You're very severe, honey," he smiled. "The answer to that is that everyone doesn't feel like me . . ."[6]

It has been remarked that there is an optimal combination of action and reflection which is likely to lead to the most economical advancement. Is that optimal combination achieved by our psychological youth? We fear not. In the laboratory, the young psychologist is doing something all the time. As his taste is for action rather than reflection, he too often comes to devote his time to questions the import of which is very meagre. Only reflection preceding one's experiment can possibly reveal the worthwhileness or pregnancy of one's problems.

Youth devoted to psychology constitutes a gigantic army. Since only a few psychologists reflect, these few — in so far as they are able to offer to the rest opportunities of doing things — are apt to become leaders whose respective groups of followers unreflectively carry out the routine they prescribe. As a consequence, arises what might be called psychological fads. Some of these fads have not even outlasted the lifespan of their authors, viz., Watsonian behaviorism; others have died with the death of their progenitor, viz., Titchenerian structuralism. The fate of Gestalt psychology remains to be seen. Of its four originators — all men of reflection, all immigrants to the United States — three have paid the debt to nature. This being the case, will the armies of non-reflective followers carry on? I venture to predict that young psychologists in this country will continue to make laboratory experiments in the Gestalt style without considering, however, the basic philosophical import of their doing. Like certain Central American Indian tribes, who perform traditional ritual dances while completely oblivious of the original magic role of these, so, young psychologists will probably practice the rites of Gestalt inquiry entirely heedless of Gestalt philosophy. For instance, phenomenal studies of the type Wertheimer, Koffka and Köhler made prominent will probably continue to be made apart from any consideration of the philosophy of phenomenal-physical isomorphism so brilliantly expounded especially by Köhler.

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[6] W. Somerset Maugham, *The Razor's Edge,* New York, Doubleday, Doran, 1944, pp. 56-57.

Of all imported psychologies the one of Sigmund Freud has probably the best odds for a long life; its basic philosophy is by now world-property and its traces upon modern civilization are not likely to be eradicated. Freud's psychology is deterministic but non-physicalistic. The evasively neutral psychology of Kurt Lewin which has recently expanded into his "group-dynamics" might also prove to have survival value particularly since it states in relatively precise conceptual terms practical problems of import. Thus, neither Freudian nor, perhaps, Lewinian psychology shall turn out psychological fads. But, who can tell with certainty?

The term "psychological fad" has been used to denote doctrines of psychology which have risen to great prominence stirring enthusiastic following only to die shortly. Thus defined, the term does not apply to the present upswing of interest in clinical and otherwise applied psychology. Applied psychology is eclectic. It does not promulgate any particular psychological doctrine of its own; it merely focuses its effort upon practical psychological problems. It is essentially non-reflective; to date, its leaders have risen to high positions not because of eminent scholarship (reflection) but, rather, because of good executive ability (action). In case applied psychology should live and progress, its progress is likely to be one with much waste.

A remarkably large percentage of scientific psychologists, particularly in our country, devote their time to the study of animal behavior under laboratory conditions. This would seem to be a matter of taste or, perhaps, of the psychologist's amends for his phobia of man. These experiments are relatively simple, control and recording being easy. Laws found through animal study are hoped sometime to throw light upon man's nature. One sequela of the psychologist's taste for animal study has proved fatal. As there is no certainty that animals experience and are guided in their activities by experience, any assumption to that effect — it is claimed — has to be avoided by scientific psychology. Since man is an animal, the same assumption has to be abandoned in all human psychological study. Man, then, is interpreted in the terms of the infra-human as blindly reacting to events in his environment. Experience, if at all admitted, becomes degraded to a sheer epiphenomenon upon nervous function and does not in any way influence the course of human behavior. "Something like the reflection of a tree in water; it couldn't exist without the tree, but it doesn't in any way affect the tree."[7] Such an interpretation of man's conduct is in strict opposition to every man's knowledge of himself; nevertheless, the argument has constituted an effective rationalization of the physicalistic approach to human study.

A brief sketch has been drawn of the stand of much contemporary psychology toward the great problem of man. In case the description of man in physicalistic terms be a valid statement of his nature, then his purposive, insightful and foresightful activity is an illusion as is also his ability of free creation; then, indeed, the biblical myth of man's creation in God's image would be but the story of God's failure. In case, on the other hand, contemporary physicalistic psychology by depriving man of the abilities mentioned has constructed a false model of man, then, the effort of much contemporary scientific psychology would be but man's folly. It is the task of the present work to argue the latter supposition. The first step in that endeavor must be to re-introduce into scientific psychology — on reasonable ground — the psychological self or mind, that self which strives, knows and feels.

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[7] W. Somerset Maugham, *The Razor's Edge,* p. 137.

PART II

THE EMPIRICAL BASIS OF THE PSYCHOLOGICAL SELF

CHAPTER II

SCIENCE AND THE WORLD OF EXPERIENCE

IT WOULD SEEM evident that any one science must harvest its raw-material from the world of experience. Equally evident would it seem that no scientists would ever be able to repeat and to compare one another's inquiries were not the substance of experience capable of being shared and communicated; but for such repetition and comparison there would be no science at all. These two suppositions have to be considered indispensable truisms or axioms. Although, in general, literary language implies that experience and knowledge can be shared, individual literary statements might defy that general allusion, for instance, a saying like "experience never repeats itself." Let us inquire into the meaning of that apothegm. At its face value, it would seem to have a two-fold innuendo.

(1) One and the same individual never recapitulates his own experience.

(2) Different individuals never recapitulate one another's experiences.

Examining each one of these suppositions, as a matter of clarity, we shall begin with the second one.

Imagine a situation (X), a context in the universe external to two different human beings (A) and (B). Imagine, further, each one of these human beings independently entering into such a relation with situation (X) as will result in experience. The upshot will be two relational contexts: (A-X) on the one hand, and (B-X) on the other. These will evidently differ in proportion to the difference between (A) and (B). Assuming that experience is conditioned by these contexts, the experience of each one of the two human beings, (A) and (B), will also differ.

Turning now to the supposition that no one human being ever recapitulates his own experience, that theorem might be founded upon one or the other or upon both of two possibilities.

(1) It might be that no one human being remains entirely the same from moment to moment of experience. The consequence would be that what in one moment of specific experience would be conditioned by (A—X) would be conditioned in the next moment by (A^1—X). The difference in the two moments would then be a function of the difference between (A) and (A^1).

(2) An alternative possibility might be that, whereas a human being remains unchanged no environmental context remains the same from moment to moment of experience. A change of that kind would cause the conditioner of a present specific experience (A—X) to become in the next moment (A—X^1). The difference in the moments of experience would be a function of the difference between (X) and (X^1).

(3) The remaining alternative would attribute a change from moment to moment not only to the human being but to the environmental situation as well. The conditioner of one moment of experience, (A—X), would then in the next moment change into (A^1—X^1). The difference in the two experiences would be a joint function of the difference between (A) and (A^1), on the one hand, and of (X) and (X^1), on the other.

We have analyzed the saying "experience never repeats itself." Popular sayings frequently contradict one another. Thus, there is another dictum, "nothing is new under the sun," which evidently is inconsistent with the former. In each we have instances of overstatement, a common error of lay and literary testimony. Aiming at cardinal point or gist, literature frequently overshoots its goal. With the greatest ease, may we harmonize our two predicates by entering respectively a moderator, the word *entirely*. They would then read: (1) "experience never *entirely* repeats itself" and (2) "nothing is *entirely* new under the sun." Thus tempered, the two theorems are not only mutually compatible; they are also each in full harmony with the general assertion that, in a measure, knowledge can be shared.

In conclusion, we may then agree that, in certain respects, each human experience is always unique and novel, in others not, and that the task of science is to treat systematically what is common in experience. But, this is only the beginning of wisdom, for the question as to what is common and what is unique is not as yet even provisionally determined. Let us examine a few possibilities.

A number of writers have made a veneer of what they call the "phenomenal world." They have told us that scientific thought-constructs ultimately rest upon items in that world. What, then, is the phenomenal world? Some, like Wolfgang Köhler, have identified it with the "world of direct experience."

In Köhler's earlier work, *Gestalt Psychology,* the term *phenomenal world* does not appear at all, but rather the expression *world of direct experience.* In his later work, *The Place of Value in a World of Facts,* the latter expression, *world of direct experience,* is not to be found but in abundance the former, *phenomenal world.* Nevertheless, one feels that the two expressions mean much the same. That impression becomes confirmed as soon as we note how Köhler describes the relation of the two worlds to physical science and to the physical world. Here, the *physical world* is called the *inferred world;* it is said to be constructed from items of the *world of direct experience;* there, the *physical world* — now called the *transphenomenal world* — is said to be constructed from contexts of the *phenomenal world.* "As a child, I had 'direct experience'," writes Köhler, "before I even dreamed of a world like that of physics . . . Physics . . . introduced me to a manner of thinking that made the meaning of 'direct experience' clear. The physical world could not be the same as that 'objective' world which I had around me the whole time . . . Therefore . . . the physical world had to be constructed . . . built up by inference as something found indirectly or mediately . . . I . . . can see no other way of discovering the properties of physical reality but by observing 'objective experiences' and drawing my conclusions . . . from them . . ."[1] The substance of that passage recurs in Köhler's later book; the term *phenomenal world* seems just to take over for the term *world of direct experience.* For, here, he points out that "man has no direct access" to the physical world. "The phenomenal world," he states, "contains all the material which is directly given to him. Thus, our approach to the physical domain . . . will always be a procedure of *construction.* For this construction no building material is available but what we find in the phenomenal world."[2]

In case, the two passages quoted attest the identity of *direct* and *phenomenal* experience, then, we may ask whether they are true. For the sake of an answer, let us examine the surface meaning of the expressions: *direct experience* and *phenomenal experience.* Köhler clearly indicates that the former is largely perceptual experience. The experiences of percepts are considered to arise whenever excitation of receptor sense organs set up nervous process proceeding to certain parts of the roof-brain. The origin of percepts in nervous process initiated in sense organs might justly challenge their being called *direct* experience. Sir Charles Sherrington has recently argued that our experience of our own mind or self is more immediate than any perceptual experience, no sense organ being directed upon it at all. "No organism," he writes, "seems furnished with any sense-organ which takes into its purview even the place pertaining to its finite mind. . . ."[3] And he continues, ". . . there is in the conscious motor act an awareness . . . of the 'I-doing'. This latter awareness is not derived from sense. It is the 'I's' [self's] direct awareness of itself acting."[4]

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[1] Wolfgang Köhler, *Gestalt Psychology,* New York: Liveright, 1929, pp. 20-26.

[2] Wolfgang Köhler, *The Place of Value in a World of Facts,* New York: Liveright, 1938, p. 142.

[3] Charles Scott Sherrington, *Man on his Nature,* p. 316.

Leaving aside the question of the directness of perceptual experience what, in Köhler's view, is the antonym of a *directly* experienced object or event. He very clearly indicates that that antonym is the *inferred* object or event. Inferred thought, in other words, would be *mediate* experience. That concludes our examination of the surface meaning of *direct experience.* Let us explore, now, what the term *phenomenal experience* entails. "Phenomenal" refers, I believe to properties inherent in items of awareness. The dichotomy of *direct* and *indirect* or *mediate* is not implied in the term *phenomenal; direct* and *mediate* experiences do not segregate as categories of awareness. But, the very acts of *inferring* being modes of awareness become items in the *phenomenal world;* the *phenomenal world,* indeed, becomes equivalent with all experience. This leads to difficulties that cannot be overcome as easily as Köhler seems to think. His dilemma deepens through his insistence of calling all *inferred* experience *transphenomenal* and identifying it with the concepts of the *physical* world. His attempt to meet the difficulty is hardly satisfying. ". . . the inductive procedure of science with all its hypotheses and constructions [that is to say: *thought*] *is* a subject matter of phenomenology. This does not mean, however, that the *content* of such assumptions should be mixed with purely phenomenological propositions."[5] Whether or not one is justified in such a dualism between thought and content of thought, committing the former to the *phenomenal* the latter to the *transphenomenal* world is a subtle question not as yet to be debated.

Being constrained to regard all awareness, *qua* experience, as phenomenal, one would think it superfluous or even contradictory to retain the attribute *direct* for that world which

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[4] *Ibid.,* p. 325.

[5] Wolfgang Köhler, *The Place of Value in a World of Facts*, p. 70.

Köhler ordains synonymous with the *phenomenal world,* notably the *world of direct experience.* That being the case, we have only *one* world of experience to take note of, name it as we like. We are confirmed in our rejection of the dichotomy *direct* or *phenomenal* versus *indirect* or *mediate* experience by the fact that the so-called *phenomenal world* has been so differently described by different authors of distinction. To David Hume, as we remember, the *phenomenal world* is but a flux of sensations. To Sherrington, the self or finite mind is the most immediate of all items of experience. To Köhler, the *phenomenal world* is a field in which contexts segregate and distribute themselves autochthonously in accord with laws of their own; the self is no more than a segregate among segregates, notably, the body-percept. Köhler offers a few suggestions as to what we have to disregard whenever we attempt to probe the silver-screen of the appearances proper. "It is most essential for phenomenological statements," he expostulates, "that they never be confused with hypotheses or even with knowledge about the functional genesis of phenomenal data. Where a thing has come from, to what its existence or that of its properties is due, is a valid question, but . . . not a question for phenomenology."[6] Again, Hume debars form the *world of the phenomena* causation. The passage by Köhler here quoted would seem to imply that he acquiesces with Hume. Contrast with their position the verdict of A. D. Ritchie, the biochemist-philosopher. "Mixed up with awareness of posture, movement and contact is something that may be called awareness of causal relations. We are aware that what touches or is touched is causally operative on us or we on it . . . These apprehensions must in some sense be elements of immediate awareness, even if they are quite inarticulate . . . The objection that there cannot be such a . . . kind of awareness because no specific sense organ is known to mediate it is very dubious physiology and downright bad metaphysics."[7]

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[6] Wolfgang Köhler, *The Place of Value in a World of Facts*, pp. 69-70.
[7] A. D. Ritchie, *The Natural History of Mind,* p. 150.

Since the interpretation of the "phenomenal" and of the "immediate" varies so greatly with different writers, it would seem futile to attempt identifying that which is common and shareable in human experience with that which is phenomenal and immediate. The quest of the *objective* versus the *subjective* which has haunted the philosophers throughout ages does not seem solved by identifying the former with the transphenomenal or mediate and the latter with the phenomenal or immediate. Our problem has to be examined anew.

I shall attempt systematically to do so, to begin with, by investing the concept of *world of experience* with the broadest possible meaning; in fact, I shall use the term *world of* to denote the totality of a kind, notably, the kind we call experience. In lay language the term *world of* is frequently used in that broad sense. We speak, for instance, of the plant world, the world of ideals, the world of human relations, etc. In all these cases we imply by the term *world* the totality of that which pertains respectively to plant-life, ideals, and human relations. In that same sense the expression *world of experience* shall be used to betoken everything pertaining to experience.

From such a standpoint, the world of experience becomes unfathomably rich in content, for it includes everything that is experienced and has been experienced by all human beings living or dead in the total course of man's existence. It admits the mediations and passions of all men and women of the past, their hopes and disappointments as well as their coolest intellectual endeavors. I propose to set only two limitations of the world of experience. I do not admit to it either experiences suffered or having been suffered by infra-human living beings of all times or the possible though problematical experiences appertaining to the "disembodied spirits" of departed men and women. As to the former experiences they mostly do not permit of qualitative evaluation, as to the latter, evidence is not sufficient to establish their actuality. Aside from these limitations the world of experience comprises every phase of consciousness of mankind in evolution. Of course, I have assumed — who knows with what right — that planets and stars as well as inanimate things within our globe or on its side do not experience. This broad definition of the world of experience carries important innuendoes to all sciences particularly to psychology; for, in the case of the latter science, it expands the field from which the psychologist could properly reap his raw-material infinitely beyond the narrow walls of the laboratory. It points to the human document as laid down in history as a pertinent topic matter for psychological study, that document which attests man's achievements down the ages. It would be singular, indeed, if the study of human achievement, past and present, would not tell us important facts about man. Notwithstanding, such a study is practically neglected by most contemporary psychology.

Is it possible to give a comprehensive symbolic expression to the world of experience thus broadly conceived? I believe it is. Let us first express the total experience on the credit sheet of a single individual from the moment of his earliest infant joy or woe to the moment of his last anguished exhalation in death or — be he alive — to his experience of the very present second in eternity. If that total be denoted (TEH) — total experience of one, species *homo* — and the individual units of experience constituting that total respectively by Roman numerals, we can formulate the following epitome.

$$(\mathrm{TEH}) = \mathrm{I},\ \mathrm{II},\ \mathrm{III},\ \mathrm{IV}\ \ldots\ldots\ldots\ldots\ \mathrm{N}$$

Epitomizing in a similar manner the total experience of any one man and woman living or dead, we can make a synoptic chart of the experiences of all human beings of all times.

$$(\mathrm{TEH}^1) = \mathrm{I}^1,\ \mathrm{II}^1,\ \mathrm{III}^1,\ \mathrm{IV}^1 \ldots\ldots\ldots\ldots \mathrm{N}^1$$
$$(\mathrm{TEH}^2) = \mathrm{I}^2,\ \mathrm{II}^2,\ \mathrm{III}^2,\ \mathrm{IV}^2 \ldots\ldots\ldots\ldots \mathrm{N}^2$$
$$(\mathrm{TEH}^3) = \mathrm{I}^3,\ \mathrm{II}^3,\ \mathrm{III}^3,\ \mathrm{IV}^3 \ldots\ldots\ldots\ldots \mathrm{N}^3$$
$$(\mathrm{TEH}^4) = \mathrm{I}^4,\ \mathrm{II}^4,\ \mathrm{III}^4,\ \mathrm{IV}^4 \ldots\ldots\ldots\ldots \mathrm{N}^4$$

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$$(\mathrm{TEH}^n) = \mathrm{I}^n,\ \mathrm{II}^n,\ \mathrm{III}^n,\ \mathrm{IV}^n \ldots\ldots\ldots\ldots \mathrm{N}^n$$

Each line in the chart represents the total experience of one human being; all together, the lines give the total of all experience of all human beings of all times. The fact of the Roman numbers in each series following one another in the same numerical sequence should not be taken to imply that in different human beings, certain types of experience are apt to accompany one another in isonomic order. Our arrangement aims entirely at systematic clarity. Lay language speaks of experiences of infancy, of adolescence, of adulthood, and of old age. Even such a crude schematization is not intended by our chart. This much should be noted, however, that experience N is always the last experience of each individual, whether it be his experience of death or his experience of the present moment.

The individual epitomes in the synoptic chart indicate respectively that any one experiential unit or context is, in a measure, unique; each Roman number in the different individual series is qualified by a small raised number, the same within each series but different, respectively, for each of the series. The raised numbers, throughout, indicate the individual uniqueness and novelty of experience, the Roman numerals, that part of experience that is common to men.

Referring back to the chart of the total of all experience, that total can be given a briefer symbolic representation. Calling the world of experience (WE) we can indicate its total as:

$(\mathrm{WE}) = (\mathrm{TEH}^1), (\mathrm{TEH}^2), (\mathrm{TEH}^3), (\mathrm{TEH}^4) \ldots\ldots\ldots (\mathrm{TEH}^n);$

In turn, this epitome can be transcribed as below:

$(\mathrm{WE}) = \mathrm{I}^{(1\text{-}n)}, \mathrm{II}^{(1\text{-}n)}, \mathrm{III}^{(1\text{-}n)}, \mathrm{IV}^{(1\text{-}n)} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \mathrm{N}^{(1\text{-}n)};$

The last transcriptions emphasize clearly our point at issue. Each one of the raised numbers (1-n) occurs exclusively in respective individual series $((\mathrm{TEH}^1)\text{-}(\mathrm{TEH}^n))$, while each one of the Roman numerals (I-N) occurs in any one of the individual series $((\mathrm{TEH}^1)\text{-}(\mathrm{TEH}^n))$. The raised numbers (1-n) always stand for that in experience which is unique and ever novel and so cannot be shared or intelligibly communicated, while the Roman numerals (I-N) stand for that in experience which, in some measure at least, is objective, that is to say, can be shared and intelligibly communicated. We then realize that what the Roman numerals indicate is exactly that part of the world of experience upon which science is bound to build.

What, in meaningful terms, is contained in the abstract world of the Roman numerals — let us call that world (WRN)? Here we face a real problem, one that cannot be approached from "above." We might have to trespass the various sciences and examine with what matter they are respectively dealing. But, before betaking ourselves to that quest, let us indulge some different patterns of reflection.

It is evident that the world of the Roman numerals (WRN) is but a skeleton model which, in some manner or the other, we are called upon to make concrete. What is it that is primarily concrete, real and meaningful to men? Everything that is desired because of its usefulness. That reply gives us a definitely oriented lead. Literary and lay language alike imply that a large portion of mankind adopts as true certain suppositions; upon these men act and adjust themselves in their everyday life. These suppositions — indispensable in most practical concerns — would seem to bear the pragmatic insignia of validity. What are they? Again a difficult question, one, however, that has been given consideration by some of our keenest contemporary thinkers like William James and G. F. Stout, also by the succession of members of the Scotch School of Common Sense Philosophy. James characterizes this world of *common sense* briefly as follows: "Our fundamental ways of thinking about things are discoveries of exceedingly remote ancestors, which have been able to preserve themselves throughout the experience of all subsequent time." [8]

G. F. Stout, like James, emphasizes, the pragmatic criterion of validity of the world of common sense. He writes: "Whatever principles are really presupposed as indispensable for practical efficiency are regarded as warranted by common sense."[9] The determination of these indispensable principles he considers the philosopher's task — a task in which the philosopher should allow himself to be guided neither by the beliefs of the "plain man," nor by the opinions of the specialist. "The philosopher . . . does not directly appeal to what the 'plain man' expressly asserts or believes. He finds it necessary to get behind this by a process of constructive interpretation. . . . What he is led to assert in the name of common sense will depend on his critical and comparative scrutiny of human experience in general. Only in the light of higher developments can he discriminate what assumptions are really essential to primitive practical efficiency from prejudice due to narrowness and ignorance."[10] And he even continues: "even when a view seems clearly endorsed by Common Sense and is not in any likely way traceable to a natural fallacy, the philosopher is not justified in straightway accepting it without further inquiry. He has still to examine it himself and to take account of the difficulties and objections raised by others. But he ought to start by regarding it as having a presumptive claim to acceptance which can be upset only by cogent and positive reasons against it. The mere failure of this or that specialist to find reason for it, within the limits of his own domain and characteristic methods, ought to count for nothing. It is on the par with the testimony of witnesses absent from the scene of crime who are prepared to swear that they did *not* see *A* kill *B.* If the philosopher not only finds no relevant reason for rejecting the Common Sense view, but finds it confirmed by his own independent scrutiny — if, in particular, he finds that it is required for a coherent view of the nature of the universe as a whole — then for him it is finally established."[11]

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[8] William James, *Pragmatism,* Lecture V: "Pragmatism and Common Sense," New York: Longmans, Green, 1931, p. 170.

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[9] G. F. Stout, *Mind and Matter,* New York: Macmillan, 1931, p. 6.
[10] *Ibid.,* pp. 6-7.
[11] *Ibid,* p. 10.

I submit six predicates of common sense which I believe to be indispensable for practical efficiency and which are cherished as truths by most human beings, also by realistic philosophy. They concern the problem of reality (the ontological problem) as well as the problem of the nature of knowledge (the epistemological problem); they concern likewise the nature of the world around us as well as the nature of our own selves or minds. All human cooperation by means of language is based upon a relative affirmation of these six predicates. The world of common sense consists of shareable and communicable items of experience and belief. That being the case, the world of common sense must be contained at least as a part in the world of the Roman numerals (WRN).

(1) There is a world around us (our environment) that is real: it includes other living beings as well as inanimate things. By implication, this supposition asserts that selves exist. As any one self is capable of being surrounded, it constitutes a part of the world around every other self. *Ex necessitate rei,* that includes it among realities.

(2) Whenever we experience, we are aware of true properties of that existing world; our apprehension is adequate, that is to say, it corresponds with or befits real aspects of the universe. Except for a certain measure of such correspondence experience would not be able to guide adaptation in our environment.

(3) The terms in which one individual is aware of the world around him resemble the ones in which other people are aware of the same real world. Less that resemblance, joint effort on the part of members of a group would never be possible; social hierarchies regulated by language would never have emerged.

(4) Just as our experience of the world around us sufficiently befits that world to aid adaptation (second predicate), so does our self-awareness sufficiently befit the real nature of our selves to aid adaptation. Common sense questions the self and its

properties as little as it questions the existence and properties of environmental things.

(5) Just as the terms in which one individual is aware of the world around him resemble the ones in which other people are aware of the same real world (third predicate), so do the terms in which one individual is aware of himself sufficiently resemble the ones in which other people are aware of *him* to make possible and to aid cooperative endeavor. This predicate as well as the one to follow indicate that self-awareness is not entirely private. Community of language makes it shareable at least in a measure commensurate with the requirements of practical efficiency in human intercourse.

(6) Just as one individual's experience of himself resembles the experience of himself on the part of other people (fifth predicate), so do the terms in which one individual is aware of *his own self* resemble the ones in which other people are aware of *their own respective selves;* this resemblance — though only approximate — is sufficient to allow cooperative endeavor.

Reflection upon these six predicates of common sense reveals that they embody three basic affirmations; (1) they assert the reality of the world to which we belong, (2) they assert the practical validity of our knowledge of that world, and (3) they assert that, in a measure, knowledge can be shared. These allegations of common sense, inhering in all literary language, are implicitly approved, not only by understanding lay readers of literature, but also by all scientists.

The six predicates of common sense refer only to very basic and general data in the world of common sense. Assuming that it could be completely described, would then — as might be thought — the world of common sense become congruent with the abstract world we have called (WRN), the world of the Roman numerals? Not necessarily. Its content would always be a subcontent in (WRN), but most likely never its total content. For it might be that in the abstract world of the Roman numerals rest potentialities which have not actualized into concrete common knowledge because they have not been of sufficient pragmatic significance to warrant actualization. For instance, very few people are aware of the fact that if they bend down and look at the world between their own spreadeagled legs, they will have more vivid color-impressions than otherwise. This is a fact not sufficiently significant for practical purposes to have become inter-individual human property; nevertheless, anyone interested can make it his own experience. Though crippled by the lack of need, it has the potentiality of becoming an item in the world of common sense. I have known artists who for professional purposes have cultivated the *head down* vista. Thus, if we call the world of common sense (WCS) and if we examine the relation of that world to the world of the Roman numerals (WRN), we can always affirm that the former is equal to the latter minus certain latent or potential items. In other words: (WCS)=((WRN)—(X)). This goes to show us that the world of common sense under all circumstances is the closest concrete approximation to the World of the Roman numerals. That being the case, when we proceed to examine the basis of the sciences in common human knowledge, we might as well consider our orchard of profusion the world of common sense (WCS). If common knowledge, as one of our predicates of common sense asserts, stands for real properties of the universe around and within us, then the world of common sense can be regarded — at least in some measure — a mirror of the real universe, perhaps, even the most direct approximation to that universe within the scope of human apprehension. Its relative correspondence with the nature of things is pragmatically validated every minute; for our adaptations to the world of which we are a part, the practical efficiency of all our purposive acts, depends upon common sense.

We should humbly admit, however, that our common sense knowledge of the universe may be only fragmentary and that the ultimate nature of the latter may be as yet an imponderable, or an (X). Certain properties of that (X) we seem to know in the terms of awareness symbols emerging in the interchange of mental and non-mental events. Though, on pragmatic ground, we may assume a certain degree of correspondence between these awareness symbols and real properties of the (X), biological considerations should open our mind to the possibility that what we apprehend may be only a fragment of the world. Suppose some cave-dwelling animal could speak and should tell us that the world with which he is acquainted is all there is in the world; his statement would be preposterous. We represent a higher evolutionary stage than the cave-dweller and, no doubt, the world we know is richer and more complex, but, we, the humans of today, may not represent the end-stage of evolution; a super-being — as far as we can tell — might be in the making upon whose mind the action of (X), and the retroaction of his mind upon (X) might reveal, in the terms of entirely new symbols, properties of the (X) of which we are at present completely ignorant.

> " . . . It's because the thumb is opposable to the other digits that the hand is the admirable instrument it is. Isn't it possible that the opposable thumb, doubtless in a rudimentary form, was developed in the remote ancestor of man and the gorilla in certain individuals, and was a characteristic that only became common to all after innumerable generations? Isn't it at least possible that these experiences of oneness with Reality [cosmic consciousness] that so many diverse persons have had point to a development in the human consciousness of a sixth sense which in the far, far future will be common to all men so that they may have as direct a perception of the Absolute as we have now of the objects of sense?" [12]

Common sense cleaves its world along various planes resynthesizing it anew into novel formations. A very real dichotomy within the world of common sense is the one of self and its surrounding (cf. predicate (1)). By a triple cleavage of the surrounding and by re-synthesis of one of its parts with the self, arises the trichotomy: human beings, infra-human beings and non-living things. By re-synthesis of the first two a new dichotomy is formed: living beings and inanimate things, this dichotomy becoming generalized into the animate versus the inanimate world. From the self splits off its body and there appears a dichotomy: body and mind or self, the former, however, remaining an indispensable instrument in all the self's action upon its environment. This dichotomy is carried over to all human beings and some animals leading to the generalized dichotomy of body and mind. The dichotomy of matter and mind in its widest ontological and epistemological significance is visioned by philosophy rather than by common sense.

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[12] W. Somerset Maugham, *The Razor's Edge*, p. 227.

Common sense does not question the reality of the psychological self as known by itself (cf. predicates (4), (5), and (6)); science might — if so on bias. Most civilized languages have symbols to denote the psychological self: a pronoun or a special tense of the verb or what not. In the English language the pronoun "I" serves that purpose. The self of common sense has certain definite properties. It is an agent that in some measure has powers and is capable of controlling natural events. Common sense does not question that what seems man's *will* initiates action on the part of what seems man's body; nor does common sense question that what seems man's experience guides what seems man's purposively directed and intended conduct. What seems to common sense guiding experiences might be of a considerable variety of kinds: they might be the experiences of perceived environmental situations; they might be memory experiences of past events; they might be anticipatory experiences issuing from inference or complex reasoning; they might also be affective experiences of different sorts, and so forth. Basic in the world of common sense is man's nature of a goal-seeking being. In the pursuit of his goal, his will produces desired changes in his relation to his environment. His will seems effective cause. These are only a few samples of the properties that belong to man's psychological self. The self of the world of common sense may perhaps be generally described as follows: *a being capable of striving, knowing and feeling, of knowing itself — its own striving, knowing and feeling and of carrying, in the terms of its own memories, its own continuity and unity.*

We have regarded it an axiom that all sciences ultimately procure their raw-material from the world of experience. Since moments of experience in some of their aspects are always unique and novel, in others not, and since science can build only upon experience that is repeated and common to many, it became a problem of eminent significance to sift out from the world of experience that part which is syndicated and whose items consequently can be shared and communicated. In the abstract, we denoted that part the world of the Roman numerals (WRN). In identifying the world of the Roman numerals, we were led to the conclusion that the nearest meaningful approximation to that world was the world of common sense (WCS). We are thus committed to assert that the realm from which the sciences reap their primary material of observation and study is that common sense world. In turn, it would then seem natural to consider the difference between sciences to lie in the difference in the basic material they respectively extract for conceptualization from the world of common sense; any one dictionary definition of the various sciences supports that consideration. It is by no means revoked by the fact of necessary overlappings between certain sciences, for, despite overlapping, there is in each one of the sciences a respective focal point of orientation that is specific to it. It would seem natural, furthermore, that each science builds its own conceptual system of generalizations and hypotheses in such terms as are pertinent to its topic matter; the only adequate comprehensive philosophy of nature — if ever obtainable — would have to integrate the conceptual systems of all the sciences. Such a progress of events within the world of learning would seem compelling and sound. It would imply the acknowledgement that the universe is a blessed garden of inexhaustible abundance, that many gardeners are required to take care of it, and that in order to harvest its full benefits, many of these gardeners must remain specialists. Handling special tasks, each one of them has to apply to his respective field the ingenuity of thought and technique best fitted for the latter. Our metaphor is meant to imply that in man's commerce with the world to which he belongs — as that commerce is mirrored in the world of common sense — related things and events segregate into groups to be treated by human thought as related and segregated. Should that treatment issue in different sets of generalization, so different as to suggest even a plurality of ultimate essences in nature, what of it? It is true that there are philosophers to whom the very idea of a plurality of essences is obnoxious. Might we not just deliver these up to their philosophical woe?

In the course of time, due to systematic perfection, the physico-chemical sciences have attained a level of prestige higher than any other science except mathematics, the queen of all sciences. Despite the perfection of these sciences it would be a logical error to claim that all there is in nature is of the order of the energy-systems of physics and chemistry. The reason has been connoted earlier. The two sciences concerned select from the world of common sense essentially such items as can be directly or indirectly measured, quantified. Since these items compound only a small part of the world of common sense, a philosophy built upon them is no more than one among the many conceptual systems that the various specializing workers in nature's garden of abundance strive — or should strive — to attain. A part and its derivatives can never be properly identified with the whole of which they are a part.

The prestige of the physico-chemical sciences has fostered what I have called the "depressive neurosis" of other sciences, most conspicuously of much contemporary psychology — that psychology which in various respects has attempted to mould itself upon the patterns of physics, viz., in respect of its selection from the world of common sense of raw-material largely of the quantifiable kind, and in respect of its obtaining and elaborating that material.

A remedy for psychology's infirm condition can now be suggested. Psychology, rather than concerning itself exclusively with the measurement of overt behavior, might choose as its own specific material of conceptualization the psychological self of common sense and its properties. Though these may not be readily quantified, they are nevertheless shareable and communicable and, in that sense, objective. Such a psychology would be conational, that is to say, it would acknowledge as basic empirical facts the goal-seeking nature of the human being and the guidance of purposively directed endeavor by experience. It would be the psychology of *conation and our conscious life.* Surely, it would mirror man far more effectively than any physicalistic psychology. I have repeatedly heard the late William McDougall, the most ardent advocate in modern time of dualistic introactionism in psychology, express the conviction that even if there had never been any physico-chemical science at all a perfectly adequate psychological science might have been built upon the data mentioned above. To those of us who, like McDougall and myself — though it confines us to intellectual loneliness and isolation — follow the conational tradition of the Scotch School of Common Sense Philosophers, it is encouraging to be able to list with the endorsers of many assertions of common sense, including the psychological self, a man who has only recently spoken in the aula of philosophers, a veteran worker in a strictly scientific field of inquiry, the physiology of the nervous system, recipient of the Nobel Prize for distinctive contribution to knowledge and deliverer, in 1937-38, of the Gifford lectures in Edinburgh, Sir Charles Scott Sherrington. His philosophy of nature shall be discussed shortly.

Assuming that we endorse a psychological science that, in its own right, builds upon the empirical fact of the psychological self and its properties — considering the human body but an instrument of that self, an instrument which can be studied in relative independence by other sciences: physiology, anatomy, medicine, and what not — then, we may arrange a large number of the sciences along a scale; the position on the scale of each science would disclose, on the one hand, its own specific focal point of orientation in reference to its selection of raw-material from the world of common sense, on the other hand, its relation to other sciences with which it is likely partly to overlap. I indicate below the position on the scale of only a few sciences, realizing that my chart is only tentative and that some critics might wish to switch the relative position of some of these.

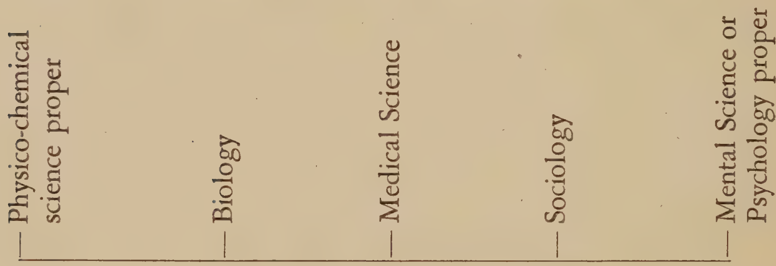
Physico-chemical science proper
Biology
Medical Science
Sociology
Mental Science or Psychology proper

Fig. 1

I would contend placing, respectively, at the end points of this scale the physico-chemical science proper — dealing with the quantifiable items of the inanimate world — and psychology proper or mental science — concerned with the psychological self and its properties. About half way between the two, I would place the medical science — engaged, for the sake of healing, in the study of pathological conditions of the human being. Some of my colleagues would probably prefer to place medicine nearer the physico-chemical science. I justify my disagreement by the increasing tendency among medical men to consider all disease "psycho-somatic," that is to say, having a mental as well as a physical aspect or determinant. The sub-branches of medicine are too numerous here to be given notice. Between the physico-chemical and the medical, I would place the biological science dealing with the structure, function, and growth of living organisms, with the evolution of the species, with the classification of these, and with the habits of the individual species. The biological science breaks up into many sub-sciences each with its special focal point of orientation; zoology, botany, physiology, anatomy, cytology, embryology are but a few of these. The sub-sciences of biology are not indicated on our chart. Between the medical science and the psychological science proper might be placed sociology, the science which is focused upon the development and improvement of human institutions. Around this science cluster, again, a number of sub-sciences, the social sciences (not indicated on the chart), each with a more or less different orientation: political science, economics, cultural anthropology, social psychology, social pathology, "group-dynamics," and many others.

Several of the sciences cannot be placed on our scale. This, for instance, is true of mathematics. Mathematics is a science in its own right, but, it is also an auxiliary to many of the sciences in our chart: to the physico-chemical science, especially, but, in so far as they overlap with the latter, also to the biological sciences; and, in so far as it — mathematics — has developed a sub-branch called statistics, to many of the social sciences as well. Its aid to conational psychology, the birth-right of which we are here arguing, is less, because that psychology — though it deals with shareable and communicable items in the world of common sense — does not deal essentially with quantifiable items. History is a science in its own right; like mathematics it is also auxiliary to many of the sciences on our chart. In so far as it presents the document of human achievement of the past, it is of moment to psychology proper and to many of the social sciences. In case — like rune-stones and hieroglyphical inscriptions — paleontological remains were considered historical documents — as they are not — then, history would be an auxiliary also to biology. The history of any one of the individual sciences might matter in a different sense, notably, in the sense of informing us of the mistakes these, respectively, have committed in the past. The science of logic is of vast import to all sciences since it lays down the very laws of good thinking.

It has been pointed out repeatedly that the physico-chemical science as well as all those sciences which, suffering from the "depressive neurosis," without valid reasons mould themselves upon the patterns of physics, attempt to keep man out of their domain. Since any observation, even the simplest pointer-reading, is a mental act on the part of a conatively active human self, this, of course, is absurd. As to the higher cognitive acts such as mathematical and aesthetic thinking their psychology is of unique interest but also of debarring difficulty. We shall wrestle with its problems on a later page. "Whenever experience is inferred," writes James Ward, "Common Sense . . . is right in positing a real agent answering to what we know as Self and interacting with another reality . . ., the World."[13] The psychological insight into that state of affairs ought to help correcting physicalistically biased philosophies of nature. It may do no harm, then, if every scientist and philosopher had some knowledge of good psychology; for, good psychology, like logic, is auxiliary to all sciences, including logic. When, many years ago as a young student, I was engaged in graduate work at the University of Copenhagen, Denmark, I was impressed by the fact that all students, no matter what branch of science or scholarship to which they intended to devote themselves, had to take a compulsory course in human psychology during their first year. This is a foresightful request on the part of an institute of learning; the great worth, however, of adequate psychological science warrants it.

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[13] James Ward, *Psychological Principles,* Cambridge: University Press, 1920, p. 30.

Samuel Alexander, famed as Great Britain's foremost metaphysician in modern time — deceased 1938 — wrote in 1911: "It might be supposed that to confine psychology to an account of acts of conation or attention, together with whatever further data might be utilised for more fully elucidating and explaining them, would mean the abandonment of the greater part of present psychology. It means, on the contrary, nothing more than a rearrangement of existing material or future material of the same sort. Not a single fact which now enters into psychology would disappear from its purview. It would only assume a different place and value, and be exhibited in a different relation." [14]

Alexander never enacted his project for a complete conational psychology; I shall attempt to outline one in the third section of this volume.

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[14] Samuel Alexander, "Foundations and Sketch-plan of a Conational Psychology," *British Journal of Psychology,* IV, Parts 3 and 4, 1911.

Chapter III

Philosophies with and without the Psychological Self

In order to allow the reader himself to appraise — from the viewpoint of common sense — the relative pragmatic veracity of natural philosophies with and without the psychological self I undertake here to expose two sample philosophies one of each kind, the philosophy of Sherrington, on the one hand, and the philosophy of Köhler, on the other; the respective authors of these philosophies are both men of great distinction; each of the philosophies, more or less, are representatives of their respective siblings.

Reference has been earlier made to the first law of scholarly ethics, the law that reads: *know the implications of your own expressed opinions even to the most distant, or n^{th} level of discourse.* Many thinkers scorn that law; a select few have made it their own. The latter are the ones who have had the courage of outlining their philosophies of nature. The history of natural philosophy reflects, again and again, the interminable conflict of *bias versus fact;* whenever the former rules fact deteriorates, whenever respect for facts dominates, bias breaks down. It is not uncommon that prejudiced thinkers refuse to heed facts that cannot be entered into their biased scheme whereas it is pitifully rare that a scholar facing facts humbly admits despite a bias, that the impossible is true, that it *happens as a matter of fact.*

In 1937-38, Sir Charles Scott Sherrington delivered the Gifford Lectures in Edinburgh. Here he outlines his philosophy of nature — a philosophy which instances the rare occasions when a profoundly learned man frankly admits the *theoretically impossible to happen as a matter of fact.*

Sir Charles proposes that nature contains two different actualities, the energy-systems and the finite minds. The energy-systems which form an uninterrupted continuum harbors everything we used to call matter but they harbor also all species of life. Thus no gap exists between the inanimate and the animate: life is an invalid category in nature, and so is birth and death. But the finite minds constitute an actuality different from the energy-systems; the crux of the difference inheres in the latter being energy, the former not. "Physical science," he declares, "finds us, like the rest of what it has examined, a mass entirely resoluble into units of what is called 'energy.' There remains however among the happenings met with in such a compound organism as ourselves and our like a certain residue seemingly not thus resoluble . . . They come . . . under the word 'mind' . . . Mind is not demonstrable as energy; and conversely energy is certainly not demonstrable as mind . . . The two concepts mind and energy . . . cover all our experience, [they] are both of course in themselves creations of thought. But what they respectively stand for still remains divided . . ."[1]

Finite minds as well as the energy-systems evolve. The former do not evolve from the latter; rather, when the energy-systems have reached a certain level of complexity — as in the human organism controlled by a roof-brain — the stage is set for *recognizable mind* [mind knowing itself] to appear. The energy-systems have evolved from elements of their own; recognizable mind has evolved from *subconscious* [non-recognizable] *mind.* Since mind has evolved, like everything else that has evolved on our planet's side, it has at least a temporary survival-value. That means that in some manner it is able to make more efficient man's adjustments in the world to which he belongs. That evolutionary consideration, merged with the message of common sense, leads Sir Charles to unequivocal dualistic interactionism; the two incommensurables, body and mind, reciprocally act upon one another. The most striking feature of his position is that, though he frankly confesses to that view, he holds it *theoretically* impossible. Thus reads his own candid statement. "The sun's energy is a part of the closed energy-cycle. What leverage can it have on mind? Yet through my retina and brain it seems able to act on my mind. The *theoretically impossible* happens. In fine, I assert that it does act on my mind. Conversely, my thinking 'self' thinks that it can bend my arm. Physics tells me that my arm cannot be bent without disturbing the sun. Physics tells me that unless my mind is energy it cannot disturb the sun. My mind then does not bend my arm. Or, *the theoretically impossible happens . . . Despite the theoretical I take it my mind does bend my arm, and that it disturbs the sun.*"[2]

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[1] Charles S. Sherrintgon, *Man on his Nature,* pp. 204-6.

Sir Charles' conception of the "finite recognizable mind" is no doubt a sibling of the psychological self of the Scotch tradition. Few contemporary psychologists, including those who have achieved a natural philosophy, have retained but a shadow or ghost of a psychological self. How have they compassed without it? Wolfgang Köhler's case is pathognomonic.

Köhler's views of nature as presented in his major philosophical work, *The Place of Value in a World of Facts,* can be briefly stated in ten predicates of entia.

(1) There is a *phenomenal* world.

(2) There is a *transphenomenal* world which is the *physical* world.

(3) There are in the physical world human brains encompassed in human organisms.

(4) Events betide in the phenomenal world, in the physical world, and in that part of the physical world which is the human brain.

(5) Between macroscopic physical event outside a brain and brain-event obtains a relative structural-dynamic isomorphism.

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[2] *Ibid.,* pp. 312-13. (italics mine)

(6) Between brain-event and phenomenal event obtains a perfect structural-dynamic isomorphism.

(7) As a consequence, a relative structural-dynamic isomorphism obtains between macroscopic extra-cerebral physical event and phenomenal event.

(8) Organismic events of regulation follow largely two laws: the Law of Dynamic Direction and the second Law of Thermodynamics.

(9) Macroscopic physical events, physiological events in the human organism including the brain, and phenomenal events, all tend toward simplicity and regularity; this tendency and the two laws of regulation are in harmony.

(10) All the isomorphic relations are the necessary consequences of biological evolution.

For our present purposes, only a few of these predicates require a further examination.

Referring to predicate (1), there is a branch of inquiry called phenomenal or phenomenological study. It has been practiced for different reasons by different people. Phenomenal study tries to describe the sheer appearance of things. Unfortunately, phenomenological description seems to leave room to the individual student of exercising private opinion, and so we find a variety of contradictory claims as to the real attributes of the foaming sea of appearances. Several instances of such conflicting proposals have been quoted on an earlier page.

Köhler, for the sake of his hypothesis of isomorphism (cf. predicates (5)-(7)), undertakes phenomenological study the upshot of which comes to this: phenomena behave in an autogenic, autochthonous, world of their own in which events of segregation and self-distribution of parts result in various contexts. These might be classed as (1) contexts of indifferent belongingness and (2) contexts of requiredness; in the latter enters a phenomenal *ought.* The experienced self is not banished from Köhler's phenomenal world as it was from Hume's. It is reduced, however, to a percept among percepts, the *body-percept.*

Predicate (2) reads: there is a *transphenomenal* world which is the *physical* world. Describing the physical world as transphenomenal means that it is not directly experienced — it is inferred or constructed. Inference, *qua* experience, is phenomenal, but the content of inference constitutes transphenomenal reality, a substratum underlying the appearances. This distinction, made by Köhler, is unrelated to another made by common sense, notably, the one between *act of knowing and content* known: for, to him, inference, qua experience, is an autogenic intransitive, a context in an autonomous phenomenal world, not an act intended by a substantive self. In thought *per se* requiredness is inherent; thought is an autochthonous phenomenal event. This view shall be scrutinized later in the light of common sense.

One weakness in Köhler's philosophy is that the same argument by which he pretends to establish the transphenomenal reality of the physical world might be used as well — point for point — as an argument in support of the transphenomenal existence of a world of finite minds. His case for the verity of a transphenomenal reality in general is fair enough. "Sometimes," he writes, "concrete reference is a bridge which rests on phenomenal ground on our side, and is still felt, from our side, to have a corresponding support elsewhere, although this second support is not visible from where we are. Such a second support would be a part of transphenomenal reality . . . the demonstration of any case of transcendence would be a demonstration of transphenomenal reality at the same time . . . Whenever we try to remember in spite of temporary difficulties, some data are given phenomenally which the thing beyond has to fit . . . I do not hesitate to conclude that 'transcendance' is a notion with a definite meaning, that the same is true of 'transphenomenal reality,' and that, in principle, we may ascribe existence to transphenomenal entities no less than to percepts and other phenomena . . ."[3]

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[3] Wolfgang Köhler, *The Place of Value in a World of Facts,* pp. 116-21.

Thus far, one can endorse Köhler's argument; its continuation provokes revolt. "Practically all research in natural science proceeds . . . on the tacit assumption that its subject-matter exists outside the phenomenal world of all observers . . . Knowing . . . that there is [evidence of transphenomenal reality — the case of obstructed recall] we shall from now on assume that it is evidence of facts which lie within the general realm of physical nature — the same nature with which the scientist is occupied."[4]

That argument is biased; abbreviated it runs: (a) directly experienced transcendence constitutes a testimony of the existence of transphenomenal reality; (b) science has always considered the physical world a transphenomenal existent; (c) knowing that there is a transphenomenal reality (term (a)), I assume that reality to be the physical world; (d) directly experienced transcendence testifies the veracity of the physical world (this term is not explicity given but it is implied in the argument). From term (c) henceforth, the argument is not unequivocally valid; for, assuming that phenomenal transcendence is evidence of a transphenomenal reality, the assumption that that transphenomenal reality is necessarily of the order of *physical* nature is false; it raises to the dignity of an exclusive what is only an alternative possibility. Transphenomenal reality might as well be of another kind, *mental* reality. Phenomenal transcendence, then, would equally well testify the veracity of a mental as of a physical world. In regard particularly to memory many philosophers have felt that the engram is not an adequate transphenomenal correspondent. Köhler, on the contrary, is emphatic that it is. "Where in this world of nature," he asks, "is the locus of transphenomenal existence as we find implied in our experience of direct transcendence?" And he replies: "so far as our example goes — which was a case of imminent recall — we can have little doubt about the locus in question . . .

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[4] *Ibid.*, pp. 121-22.

There is only one part of nature which, according to present knowledge, could in this case be so intimately in contact with phenomenal data. *This part of nature is the circumscribed world of brain-events.* Our conclusion will therefore be that, in trying to remember something and knowing that we know it, our reference is from the point of view of science reference to a definite neurological, or better: neural entity, an entity which would commonly and perhaps clumsily be called a memory-trace."[5]

Here, again, Köhler does not state the exclusive possibility. Many have felt that our memory dispositions cannot be accounted for in the terms of residuals in the brain, but that they require the postulation of a transphenomenal (subconscious) retentive self. The latter view would constitute an equally justified inference from phenomenal transcendence as does the predication of neural traces.

Predicate (8) concerning organismic regulation must be briefly examined. Köhler suggests that the regulation of living organisms occur for the same reasons as make physical systems attain an equilibrium. It would then depend upon the Law of Dynamic Direction as well as upon the Second Law of Thermodynamics — each one applying only to closed physical systems. The former law expresses what happens in the system only if sufficient friction within the system eliminates all inert velocities. Friction, no doubt, exists within the organism. That the organism contains many constraining devises does not revoke the application of the equilibrium theory; the equilibrium defers to those limiting constraints. The knot in applying the theory to the organism is twofold: (1) the standard state of the organism is not one of least possible but of maximal potential energy and (2) the organism is not a closed physical system. Thus, we are compelled to adopt "the concept of a dynamic steady state maintained by a continual expenditure of energy."[6]

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[5] *Ibid.*, pp. 122-23. (italics mine)

These difficulties Köhler thinks removed if we consider the organism a part only of a larger system including a section of its environment. That larger system closed, the two laws of equilibration would apply to it as a whole. As the organism would be that part of the system in which energy is continually expended, the equilibration of the total field would want energy perpetually streaming to the organism.

The critical evaluation of this hypothesis is a task for the physiologist. To the layman a few logical demurs arise. The larger system to which the two laws of regulation are supposed to apply consists, on the one hand, of the organism (O), and, on the other hand, of an extra-organismic section of the world (EO). Accepting these denotations, that larger system in toto would be ((O)+(EO)). For the theory to work, that system must be closed, that is to say, it must have a boundary through which energy can neither enter nor exit; but for that the two laws would not apply to its internal regulation. The organism, though not a closed system, has a boundary set by its relatively permanent anatomical structure; but, where is the boundary of (EO) or, rather, of the total system ((O)+(EO)), to which the laws should apply. As long as that boundary is not set independently of the requirement permitting the law to apply, the argument will become circular. In other words, the situation is: the application of the laws requires the larger system to be closed. We assume, then, that the system is closed. But, so long as this assumption is not supported by its own independent criteria, reasoning will remain tautological. The independent determination of the boundary of ((O)+(EO))—if boundary there be—would seem difficult. A. D. Ritchie, examining the application of all equilibrium theory to the living organisms, writes: "Living organisms are never isolated systems, they are always receiving supplies of energy from the outside, and they are never in a state of equilibrium as long as they are alive." There is nothing so far in his statement that Köhler would not endorse. His own hypothesis of the larger field treats the organism as an open system. But, Ritchie continues: "The earth as a whole is not an isolated system because it receives energy from the sun. All life on the earth depends upon this disequilibrium at its surface. An organism can live only so long as it has some source of energy on tap to be used when and how it is needed and the ultimate source of all this energy is the radiant energy of the sun."[7] These considerations would seem to make inconceivable the outer boundary of ((O)+(EO)) as well as the outer boundary of (O). If Ritchie is right, then Köhler would seem to be wrong not only in the logic of his reasoning but also in the factual basis of his supposition.

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[6] *Ibid.*, p. 320. The line quoted is from A. V. Hill, *Adventures in Biophysics*, London: Oxford Univ. Press, 1931, p. 62.

If I have understood it correctly the hypothesis of equilibration of the larger field should account for all behavior of the organism. The exploration of that broad aspect of the hypothesis requires the examination of Köhler's view of brain function.

Predicate (6) asserts that between brain event and phenomenal event obtains a perfect structural-dynamic isomorphism. Phenomenal events are field-events. If phenomenal events and brain events are isomorph, then the brain, or at least the cortex of the brain, must constitute a sufficiently continuous medium to allow field-process. The older notion of brain physiology was adverse to that idea; it held the elementary structures of the brain to be isolated and nervous event in the brain to be an affair of discrete process-conduction. Modern inquiry has largely silenced that objection. Köhler himself writes: "It is . . . surprising that in the theory of nervous functions, and, more particularly, of processes in the ganglionic layers the concept of macroscopic dynamic contexts is so rarely used . . . The properties of brain-tissue as a physical and chemical medium are such that in this part of the organism macroscopic contexts of function are not merely possible; it is even difficult to imagine how their occurrence could be prevented."[8]

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[7] A. D. Ritchie, *The Natural History of Mind*, p. 64.

Ernest Mach once made the observation that macroscopic physical states always tend toward a maximal regularity and simplicity. In a regular macroscopic distribution forces balance one another better than in an irregular one. Macroscopic regularity, then, becomes associated with macroscopic stability, and Mach's principle with the self-distribution of processes within the organism. Since all macroscopic physical states follow the principle, the cortical processes should.[9]

Whether or not strictly in accord with Köhler's view, I venture a reflection. Brain process is only a part-event in the greater process of regulation of the system we have called ((O)+(EO)). Nevertheless, in the major event of regulation of ((O)+(EO)), special stresses and strains in the brain would occur. As parts of the brain are leagued with the motorium of the organism, the resolution of the brain processes can not escape involving the motor organism. Overt activity would result. In the course of the general bent toward a stable state of the large system ((O)+(EO)) that activity would contribute to the ultimate regulation of the larger field. This would give us a general theory of action. I believe a passage in Köhler's *The Place of Value in a World of Facts* (p. 358) about expresses the reflection I have independently submitted. The reason for not quoting that passage is that it is too closely associated with Köhler's theory of phenomenal requiredness and its neural correlate to be understood without extensive comments. The theory of action, under all circumstances, remains an utterly vague and sketchy chapter in Köhler's philosophy as well as in his psychology.

The stage is now set for resuming our original inquiry: is there in Köhler's world-view a place for a psychological self? If not: how — as a psychologist and as a philosopher — does he manage without one?

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[8] Wolfgang Köhler, *The Place of Value in a World of Facts*, pp. 207-8.
[9] Cf. *Ibid.*, pp. 254-55.

The hypothesis of isomorphism (cf. predicates (5), (6) and (7)) asserts that phenomena concur with dynamic events within certain physical (transphenomenal) systems. These always contain at least one living human brain intact in its organism; the extra-organismic section of the system might vary in extent and composition. We are told that the phenomena concurrent with these events, segregate and distribute themselves in a phenomenal field. Insofar as that phenomenal field is a field of percepts, it consists of a phenomenal environment and a phenomenal self. The environment contains phenomenal objects, some relatively stationary, others subject to change. The phenomenal self does not fundamentally differ from other phenomenal things; it is a percept among percepts, notably the *body-percept;* it can be seen, heard and otherwise sensed; occasionally it is enriched by affective attributes. In one single passage, Köhler makes a reference to something he calls "our own personality, our self in a more refined sense of the term." [10] We wonder what that might be but we are nowhere informed. Environmental percepts may form various relations with one another. Sometimes, they bid for relations with the self; mostly, however, when environmental phenomenal items are salient, the phenomenal self seems to fade out.

Phenomenal relations may be spatial or temporal; they may be relations of similarity or difference, relations of indifferent belongingness, relations of requiredness, or what not. Environmental things, appearing as segregated wholes, possess properties which seem to be phenomenally objective. Other phenomenal properties seem to be subjective, that is to say, to belong to the phenomenal self. There is only one single context in which the phenomenal self enters as an active agent. That is in the relational context called requiredness, more especially in the

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[10] Wolfgang Köhler, *The Place of Value in a World of Facts*, p. 129.

subjective-objective type. That type constitutes only one of three, the others being *objective-subjective* and *objective-objective* requiredness, ". . . we shall borrow a term from mathematics and physics," writes Köhler, "and call interest a *vector* . . . Interest as a vector is experienced as *issuing from a definite part of the* [phenomenal] *field.* If it is 'my' interest, it issues from that particular item in the field which I call 'myself' . . . Interest is experienced as referring to . . . a very definite part of the . . . field . . . In such organization . . . the vector of interest may be qualified in a great many different ways. All, however, have this in common, that by such vectors the self either accepts or rejects the corresponding objects.[11] . . . if and in so far as interest . . . is taken in an object, it *acquires* new . . . qualities [Gestalt-or Ehrenfels-qualities], viz., value-qualities." [12]

Phenomena, then, concur with certain events in the transphenomenal world. They appear and are capable — one would think — of being observed. To whom do they appear? By whom are they observed? As one asks these two questions one feels ridiculous; for common sense has their answer so closely at hand as to make them seem unwarranted: *to and by some knowing self or mind.* Nevertheless, from the erudite standpoint of Köhler's philosophy, the questions are all but unwarranted. To bring into focus our problem, I shall discuss it in direct connection with a possible though fictitious situation.

Suppose that a scientific experiment is performed in some laboratory. Suppose that, in the course of the experiment, subjects are asked to give reports upon certain occurrences. One of these subjects is a person (X). The phenomenon to be reported is the (N)-phenomenon, or plainly (N). (X), then, observes (N) and reports. So far, common sense. Again, I ask: to whom does the (N)-phenomenon appear? who observes it? and, I add; who reports it? How are these questions to be answered from the point of view of Köhler's philosophy? We shall have to try different replies and examine which ones are possible from that point of view.

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[11] Wolfgang Köhler, *The Place of Value in a World of Facts*, pp. 73-5.
[12] *Ibid.*, p. 78.

Did the (N)-phenomenon appear to and was it reported by (X)'s finite substantial mind—the kind of mind that Sherrington admits? No, Köhler does not allow of such minds (cf. the ten predicates none of which makes any reference to a mental world).

Would the agent observing and reporting the (N)-phenomenon be (X)'s phenomenal self? In one of its aspects at least that supposition would seem untenable. The process of reporting is an organic (speech-motor) affair and so on the par with all transphenomenal events; since no phenomenon could ever be the cause of a transphenomenal event, it could not have been (X)'s phenomenal self that reported the (N)-phenomenon. There remains the possibility of (X)'s phenomenal self observing the phenomenon. In that case, his phenomenal self or body-percept would have been part of the total phenomenal field emerging in the laboratory. This is not likely; rather, was the phenomenal field one in which the environmental event, the (N)-phenomenon, was salient, the self obliterated.

Köhler criticizes the literary man, the layman, and even some philosophers for referring all experience to a self. Nevertheless, he himself — as a man of letters — shares with these that error. To illustrate, I let Köhler's book *Gestalt Psychology* fall open at a certain page. It is page 271. I close my eyes and move my pencil across the page allowing it at last to rest. These are the sentences to which it happens to point: "After a few years of traveling I meet a friend, and my first idea is 'How old he looks!' That does not at all mean that he looks particularly old on an absolute scale. *I see older-looking men every day.*" I repeat my experiment with Köhler's second major systematic work in the English language, *The Place of Value in a World of Facts.* That book falls open on page 205, and my pencil comes to rest on the following sentence: "*I do not know of any* *physical entities to which these words of Eddington would better apply* than they do to dynamic steady states which originate and maintain themselves in macroscopic self-distribution." Any one of these passages demonstrates the discrepancy between Köhler's literary language and his natural philosophy (a not unusual "philosopher's schizophrenia"); for, while the latter disavows the knowing mind and its acts of knowing, the former affirm both. Consider, one at a time, the italicized phrases (italics mine): ". . . *my first idea is* . . ." Undoubtedly, that expression implies the *belongingness* of the idea to some self or mind — in this case, to Köhler as a self or mind; ". . . *I see older-looking men every day.*" To be sure, that expression attests an act of knowing (the *act of seeing* or *of visually perceiving*) as well as an agent, Köhler, intending that act; "*I do not know of any physical entities to which these words of Eddington would better apply* . . ." Even more conspicuously than in the preceding case does Köhler's language here warrant the act of knowing as well as the knowing agency. Furthermore, the expression "*words of Eddington*" at least indirectly denotes *Eddington's thought* and, that being the case, also the *belongingness* of experience to a self or mind; the same *belongingness* as our first sample implied.

Despite the contrary implication (*qua* language) of his own writing, Köhler declares, to quote: "Percepts are, of course, not ghosts belonging somehow to the phenomenal 'self' . . . Their place is not in the 'self' . . .[13] We hear about the 'epistemological subject' who seems to be responsible for the existence of all objects . . . Phenomenally there is no such entity since the phenomenal self is decidedly not felt to be responsible for the existence of its objects (note the inconsistency in the use of the term *its objects* immediately following the denial of any belongingness of these objects to the self). That other subject is a construct. When we hear about its functions we soon begin to wonder how different it really is from another construct, namely, the physical organism . . ."[14] Köhler thinks that our tendency to conceive our experience as belonging to or dependent upon ourselves instances a confusion of the phenomenal self with the transphenomenal organism. ". . . all phenomena without any exception are the correlates of somatic processes in the nervous system. To this extent they are . . . *genetically subjective* . . . In this . . . sense, however, subjectivity means dependence on the *physical organism* and its functions; it does not mean dependence on the phenomenal 'self' or belonging to this 'self' . . ."[15] I emphatically question that we are guilty of such a confusion. The self of common sense as it is apprehended by the layman and as it is treated by the thinkers of the Scotch tradition has little in common whether with the phenomenal self as described by Köhler or with the transphenomenal organism.

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[13] Wolfgang Köhler, *The Place of Value in a World of Facts*, p. 69.

Referring to *subjective-objective* requiredness, we can list another reason why (X)'s phenomenal self could not have been the agent observing the (N)-phenomenon. Any admission to that effect would wreck the experiment. For the entrance into the phenomenal context emerging in the laboratory of (X)'s phenomenal self vectorially pointing toward the (N)-phenomenon with either acceptance or rejection, would necessarily distort the latter. In the larger context ((X)-(N)) the phenomenal object (N) would acquire an Ehrenfels-quality which it would not possess as a lone segregated phenomenal object.

So far, our inquiry has left us without the (N)-phenomenon observer as well as reporter. Let us examine a new possibility. Could the agent that observes and reports the (N)-phenomenon be (X)'s transphenomenal organism, more particularly its brain? Offhand one feels that Köhler might endorse that proposition (cf. quotation above). We would have to consider the two aspects of that question separately. Verbal reporting is an entirely transphenomenal event. As such it could possibly be effected by the brain. But could a brain observe? The nearest to an affirmation of that question would be the doctrine of epiphenomenalism. Epiphenomenalism holds that experience is the product of nerve activity in certain layers of our roof-brain; it also holds that experience *per se* does not influence natural (transphenomenal) events. If the first of these theorems has any meaning at all, it would seem to assert that the brain is the cause of experience; that the brain is the agent which experiences — a truly useless luxury. The hypothesis of isomorphism between brain-event and phenomenal event states merely a functional relation (predicate (6)). There is, however, no theoretical reason why that hypothesis and the one of epiphenomenalism might not be combined. It would be of interest to know Köhler's front toward epiphenomenalism. Unfortunately, he is very vague and never squarely faces the epiphenomenalist's problem whether in an affirmative or in a negative commitment. One has a feeling that he prefers to evade the issue. Perusing his writings, one finds passages which seem to indicate that he takes the epiphenomenalist's stand, but then one comes across other statements that make one question one's earlier conclusion. Consider, for instance, a few sentences some of which have been recently quoted: ". . . all phenomena without any exception are the correlates of somatic processes in the nervous system. To this extent they are, all of them, *genetically subjective* . . . subjectivity means dependence on the *physical organism* and its functions . . . [The phenomenal self] genetically or functionally . . . depends upon a special complex of processes in the brain."[16] Declarations like these might well be understood to asseverate epiphenomenalism; yet they are so ambiguously formulated that their author — if actually accused of adhering to that view and unwilling to be thus committed — could always interpret his terms adversely to their most patent implication; he could, for instance, insist that they refer to no dependence other than the *functional* dependence of experience upon brain activity.

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[14] Wolfgang Köhler, *The Place of Value in a World of Facts*, p. 87.
[15] *Ibid.*, p. 70.

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[16] *Ibid.*, p. 70.

"Such terms as 'depend on' and 'based on' should, of course, be used with caution. They are meant to express the fact that certain things . . . exist, disappear or change in correlation with the occurrence, the disappearance or the alteration of corresponding brain events. A relation of this kind may still be interpreted in several ways. But in our present connection there is no need to choose between such different possibilities."[17] We disagree with the author's aloof attitude and maintain that if there is *ever* a need for choice, that need is *always* there; a choice once made must be consistently supported. Frequently we find passages that positively refute epiphenomenalism: "I do not propose that phenomena *qua* phenomena can be physically 'explained.' "[18] The term *explained,* no doubt, must here refer to the interpretation of events in the terms of cause and effect. The same would seem to be true of the expression *reduced* in the following passage: "To the extent in which mental structures and functions are as such phenomenologically observable they will surely never be 'reduced' to anything else."[19] But then, again, what does Köhler wish to imply when, consistently, he speaks of the brain processes as the *psychophysical* processes? We are entirely without a reply. Might it reflect Köhler's position that his foremost follower and collaborator, the late Kurt Koffka, perhaps unwittingly, confesses to epiphenomenalism? Or is his position to be judged, rather, from his recent book, *Dynamics in Psychology,* in which he is concerned exclusively with the functional relation of phenomenon to brain event. These are all questions that one would like to have unambiguously settled.

Since Köhler seems to forswear any commitment on the problem of epiphenomenalism, we shall view his hypothesis of neural-phenomenal isomorphism as a refined form of psychophysical parallelism based upon two substitutions of novel for obsolete notions: on the one hand, the substitution for the idea of discrete process-conduction, the one of the field-process, in the brain; on the other hand, the substitution for elementaristic analysis, the one of synthetic or Gestalt-analysis, of phenomena. From the implication of that position, I shall try to state what would occur in the laboratory during the hypothetical experiment with the (N)-phenomenon.

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[17] *Ibid.*, p. 138.
[18] *Ibid.*, p. 392.
[19] *Ibid.*, p. 395.

An event takes place in a physical system ((O) + (EO)) of which (O) equals the organism of the subject (X), (EO) a section of (X)'s physical environment. The event is the transphenomenal extra-organismic correlate of the (N)-phenomenon; it disturbs the stable state of ((O) + (EO)). Like all macroscopic physical states, the disturbed state of ((O) + (EO)) tends toward re-establishment of regularity and stability. This is the essence of Mach's principle and also of the Law of Dynamic Direction, wherever that law applies. Here, at the very outset, the First Law of Scholarly Ethics compels us to a few reflections. The subject in the experiment, that is to say, its transphenomenal organism (O), has been denoted as (X). The (EO) or the extra-organismic transphenomenal environment (its pregnant part) of (X), which together with the latter forms the larger physical system ((O) + (EO)), can, no doubt, be identified with the extra-organismic transphenomenal laboratory situation — let us call it (L^x). (L^x) would then equal (EO). Let us further assume that (L^x) contains a transphenomenal experimenter (Y). The transphenomenal environment (its pregnant part) of (Y) we would accordingly denote as (L^y); (L^y) would contain as one of its parts the transphenomenal subject (X). Since the transphenomenal laboratory situation ((O) + (EO)) is *one* single closed physical system, it follows that ((X) + (L^x)) and ((Y) + (L^y)) are identical. Insofar as there obtains only a relative isomorphism between extra-cerebral physical event and phenomenal event (predicate (7)), we might have to take into account *two phenomenal* laboratory situations

(P^1) and (P^2). No one of these, according to Köhler, belong to the phenomenal or any other selves whether of the subject or the experimenter. As they are — both of them — relatively isomorph with the one single transphenomenal laboratory situation, they must as phenomena at least partially overlap. Between each one of the two phenomenal events (P^1) and (P^2) there obtains a perfect structural-functional isomorphism with respective brain event (predicate (6)). Since these brain events are transphenomenal events, on the one hand, in the transphenomenal brain of the laboratory subject, on the other hand, in the transphenomenal brain of the experimenter, and since *qua* phenomena (P^1) and (P^2) overlap it follows that there is a structural functional overlapping of the transphenomenal event in the subject's brain and the transphenomenal event in the experimenter's brain. This is an absurd notion, logically arrived at on the basis of Köhler's own philosophical premises.

A second reflection: the transphenomenal laboratory situation ((O)+(EO)) is supposed to be a closed physical system. Phenomenally a laboratory situation of the kind described, prior to the occurrence of the (N)-phenomenon, is a phenomenal field at rest. Consequently, prior to the transphenomenal event that is the correlate of the (N)-phenomenon, the transphenomenal laboratory situation ((O)+(EO)) must be one of stability and equilibrium, it is true with, nodal-points of high potentiality in the transphenomenal (X) and in the transphenomenal (Y), or to speak common sense, in the subject and in the experimenter. Since that system is in balance and since it is closed, how can ever the transphenomenal event occur which is isomorph with the (N)-phenomenon. As Maxwell, in order to save a finite universe from entropy, required a demon who opened and closed frictionless trapdoors at its boundary, collecting fast-moving molecules on one side and slow-moving ones on the other — in this manner re-creating a difference of temperature — so would the occurrence of the transphenomenal correlate of the (N)-

phenomenon require a demon who broke the boundary of the transphenomenal laboratory situation upsetting the equilibrium of that previously closed and balanced system. This would be a spontaneous act not by the intention of a human being but by a demon's intention. In the terms of common sense or — if you prefer — in the terms of psycho-physical interactionism what actually took place is simple: a spontaneous intention or will on the part of the experimenter's mind set into motion his physical body-tool or a part of it, viz., causing his hand to press a button; the pressing by the physical hand of the physical button then released potential physical forces which, in turn, produced the transphenomenal correlate of the (N)-phenomenon. But, alas! such a progress of events is not permitted by Köhler's philosophy of nature. Experienced or phenomenal spontaneity of human action is an irrefutable fact of common sense. If it has any transphenomenal correlate at all, that correlate must necessarily be some physical state of disequilibrium. This leads us back to Richie's proposal that, as far as life is concerned, there are no closed physical systems (in the transphenomenal laboratory situation, life is represented by the transphenomenal organisms of the subject, (X), and of the experimenter, (Y)): All life depends upon a disequilibrium of energy on our planet's side, a disequilibrium that shall continue until the sun reaches a certain state of cooling. At that time life shall vanish from our earth. Shall the same be the fate of mind? Who can possibly tell?

> Should human mind forever be destroyed,
> And should a sea of death and cold, the world remain
> For no one to revere and contemplate;
> Should human mind which from eternity
> A second borrowed, and in that brief second,
> A glimpse of Universal Order viewed
> To everlasting silence be confined;
> Then were, indeed, creation void of theme.

Leaving these reflections for what they may be worth, we return to our original supposition. As a self-imposed control of further reflective excursions, we shall denote with numbers phase after phase of the occurrence in the laboratory, as this occurrence would progress from the viewpoint of Köhler's philosophy.

(1) An event takes place in a physical system ((O)+(EO)). The event is the extra-organismic correlate of the (N)-phenomenon; it disturbs the equilibrium of the system. Like all macroscopic physical states, the disturbed state of ((O)+(EO)) tends toward re-establishment of regularity and stability.

(2) In the process, whether of disturbance or re-stabilization or both of ((O)+(EO)), (X)'s brain becomes involved. Within it are projected processes of disturbance and re-stabilization which — structurally-dynamically — are grossly or relatively isomorph with the extra-cerebral processes in the larger system ((O)+(EO)). This is the essence of predicate (5).

(3) For unexplainable reasons, the (N)-phenomenon concurs with the events in (X)'s brain. Between the brain events and the (N)-phenomenon obtains a perfect structural-dynamic isomorphism, that being the essence of predicate (6). In accord with predicate (7) there also obtains between the (N)-phenomenon and the original extra-organismic events in((O)+(EO)) a relative structural-dynamic isomorphism.

(4) The brain events — whether in the phase of disturbance or in the phase of re-stabilization or both — come to involve certain motor "centers" of the brain: contingent thereupon certain muscles in (X)'s organism contract and relax — muscles largely in the thorax and larynx — causing the emission of air from the lungs in organized sequences of waves ((X)'s report). As these waves are extra-organismic processes, in some curious fashion, they contribute to the final stabilization of the larger system ((O)+(EO)).

(5) Of the total cycle of events, phases (1), (2), and (4) are entirely transphenomenal (physical). Phase (3) is not; the concurrence of the (N)-phenomenon with the brain events

(phase (2)) constitutes the great riddle of all psychophysical parallelism.

To the best of my ability I have attempted to depict what — in the terms of Köhler's natural philosophy — would take place in the laboratory situation chosen as an illustration. It is a weird circle of events. Even more weird does it seem when we realize that the (N)-phenomenon, whose concurrence with the brain-events is itself a mystery, appeared to nobody; for, it could not have appeared to any agent unless either one or the other of two conditions were fulfilled: (1) if a phenomenal observer — in our case (X)'s body-percept — had been a part of the phenomenal field, more especially a part of a phenomenal (Observer-N)- or (X-N)-Gestalt, in which the former genuine part (X) had vectorially pointed to or intended the latter genuine part (N); this was not the case; (2) if a brain — in our instance the brain of (X) — had been the cause of the (N)-phenomenon, in the epiphenomenalistic sense intending the latter; this possibility Köhler attempts to elude. Therefore from his viewpoint the (N)-phenomenon was never observed.

The conclusion is that, in Köhler's philosophy, there is a place neither for active finite minds of the kind Sherrington regards as one of the two essences of nature's content, nor even for contemplative selves who observe without acting. *Nil desperandum.*

Köhler attempts to parallel in psychology the ways of the natural sciences proper. Like the physicists, reifying their percepts, he reifies the broader phenomenal world. Phenomenal events he describes as due to properties inherent in phenomenal objects *per se,* and thus crystalizes in his philosophy the idea of an autogenic autochthonous phenomenal world. The fact that psychologically all appearances are of twofold dependence, on the one hand, on a transphenomenal situation and, on the other hand, on an observing self or mind is not admitted. If Köhler's proposal had been merely the matter of a working hypothesis, or, even better, of a method of phenomenal study, there would be little to criticize. It is true, that in order to arrive at what he considers the pure phenomena, he imposes upon himself certain arbitrarily chosen restrictions. Titchener did the same: he imposed upon himself even more severe restrictions than Köhler, believing that, by so doing, he would arrive at the very elements of consciousness. Titchener is dead; his thought by now is but a chapter in history. Köhler's principles promise more than did Titchener's principles. A number of his young followers have made interesting phenomenal studies under laboratory conditions. The fact that the majority of these students are completely unconcerned with that hypothesis which is fundamental in Köhler's natural philosophy and so also in his psychology, notably, the hypothesis of isomorphism, does not reflect upon him; it reflects — if it reflects at all — upon the young generation of contemporary psychologists to whom the First Law of Scholarly Ethics is not a law unto them. On the other hand, what reflects upon Köhler is that, when he extends certain ideas — proper as a working tool — into a natural philosophy, he fails to reinstate into the scheme of things the psychological self, that self which for relatively narrow methodological reasons could be temporarily — but no more than temporarily — disregarded. Sherrington never committed that error. Whenever, as a physiologist, he labored in his laboratory, he kept the human mind out of his conceptual system, but, when he outlined his natural philosophy, he gave it again its indispensable position as a part of nature. Exactly for that reason, Whitehead's verdict on bigots who reject half of "nature's evidence" applies to Köhler but not to Sherrington; in Köhler's case the conflict of bias versus fact resolves itself into the deterioration of fact, whereas in the case of Sherrington, that conflict resolves itself in Sir Charles accepting that which, though theoretically impossible, *happens as a matter of fact.*

I have outlined earlier Sherrington's dualistic-interactionistic world-view, that philosophy which admits two eminent actualities in nature, the energy-systems, on the one hand, and the finite minds, on the other, each reciprocally acting upon the other. A brief description is warranted of the "self" or finite mind as conceived by Sir Charles. That "self" should be compared with the only concept in Köhler's philosophy that is even remotely commensurable with it, namely, the "phenomenal self."[20]

Motor acts, according to Sherrington, bring out the distinction between the self or finite mind and that which is not self. Salient in some of our motor acts notably, the conative ones, is the awareness of the self as the agent doing the act. That experience has two sources one of which is plainly sensual. Whenever our muscles contract they provoke sensations and as the result we perceive the act. Perception has always spatial reference; we perceive the bodily parts which participate in the act. But there is an experience also that is not perceptual, the experience of the "I-doing." That experience is not derived from sense. It is the self's direct awareness of itself acting. Unlike the part of the experience which derives from sense, it is not spatially projected.

The psychological self or finite mind as described by Sherrington, that self of which one is directly aware in conation independently of any provocation of perceptual processes, approximates closely the psychological self of the Scotch tradition. G. F. Stout, discussing what he calls *active tendency,* writes: "Active tendency in us is variously directed. We need here consider only our active control and command of our bodily movements. We feel ourselves active in these so far as we voluntarily initiate them . We also feel active in endeavoring to make them, even though the attempt fails. On the other hand, where the movement takes place without our voluntary initiative we do not regard it as our deed. The mere passive displacement of our body and its parts is not sufficient, though the complex of changing sensations which accompany it may be essentially similar to those of voluntary movement. Motor process involves a very complex sense-experience; but what alone gives it the character of action or active tendency is the presence of the will to move, where 'will' is taken in the wide sense of conation or appetency . . . Note the distinction between effort and the making of it. It is in the making of it or in the attempt to make it that our own subjective initiative consists. It is the effort and not the will to make it which is measured by motor sensations. Sometimes, as in building a house of cards, we may be intensively active in trying to make a small muscular effort, so that our will is defeated if we make a greater . . . Sometimes both effort and counter-effort are initiated by ourselves; this happens when, *e.g.*, we press our hands together. Here, though there are two opposed efforts, there is only one active initiative—the will to press our hands together . . ." [21]

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[20] Cf. Charles S. Sherrington, *Man on his Nature,* Lecture XI: "Two ways of one mind," pp. 324-57.

William McDougall whose thought owes much to G. F. Stout writes in the same vein: "When we strive, we are immediately aware of striving; and this conative experience, which is always present in some degree as an element or quality in our experience, varies in strength or intensity with the intensity of our striving . . . It is at a minimum when we are relaxed, indifferent, and sluggish; at a maximum when we are alert, keenly pursuing any goal, whether by the aid of bodily activity or by purely mental activity . . . [Our awareness of effort] seems to vary independently of muscular strains and tensions; [we] are sometimes aware of intense mental effort, when there is no discoverable strain or tension of any muscles of corresponding degree . . . our muscles sometimes contract very strongly, exciting intense kinaesthetic qualities, without our making any effort or having any 'sense of effort'; as, for example, in muscular cramp, or when the muscles of a limb are caused to contract violently by an electric current passed through the limb . . . we may make an effort to straighten out the cramped limb, or to stand the pain of the electric current without shrinking, or to escape from it, or to analyze introspectively its effects upon us. And in all these cases our 'sense of effort' runs parallel, not with the strength of the contraction of our muscles, but with the intensity of the mental effort we make . . . A patient suffering from some severe shock may lie as though in a trance, showing hardly any sign of life, beyond faint pulse and breathing. Yet on recovery of his normal state, such a patient may relate how during that period he was intensely active mentally, suffering an acute conflict, or overwhelmed with intense fear, which effectively inhibited all movement, or making intense efforts to recollect . . . In such cases among 'shell-shocked' soldiers I have observed a complete absence of all deep reflexes, with complete flaccidity of all limbs, a condition which seems to imply a complete absence, or at least a minimal intensity, of all sensory qualities of the kinaesthetic class . . . *We may strongly intend or resolve to produce a feeble muscular contraction; and we may also weakly resolve, may intend with little sense of effort, to produce strong muscular contractions; and these two experiences of effort of different degrees of intensity are quite distinct* . . . We see this most clearly, perhaps, when we make a great effort to keep the body perfectly passive under conditions which naturally stimulate us to bodily activity. We see it also if we compare the intensities of our 'sense of effort,' when we execute some gymnastic feat which involves considerable muscular strain, and when we attempt to beat one rhythm with the right hand and another with the left. If our bodily condition is good and we are well practised, we may achieve the former feat with little 'sense of effort,' but rather with a sense of ease and mastery; whereas, in attempting the feeble muscular movements involved in the second task, we may experience a very acute 'sense of effort,' and may, moreover find the second task much more fatiguing than the other."[22]

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[21] G. F. Stout, *Mind and Matter*, pp. 16-17.

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[22] William McDougall, *Outline of Psychology*, New York: Scribner, 1923, pp. 317-20.

We shall now proceed to state in brief the properties of the psychological self as analyzed by Sherrington. The three-dimensional space, he has it, is apprehended as a sphere in which the self is always central, invariably more central than whatever it perceives. The projection of perceived objects is always in a radiant direction away from the self. The experiences and the doings of the central self are conceived as acts on the part of one and the same actor; whatever they be, striving, knowing or feeling they belong to a self that remains central in its own sphere. The awareness of the "I-doing" being unprojected, is distinguished from the body. Here, and henceforth, we should recall how Köhler, rejecting entirely the active but non-perceived self, equated the experienced (phenomenal) self with the body-percept. Sherrington preserves the two, identifying the former with the finite mind. The unprojected self is the cause of the projected act; this conjunction is naive, unargued. How do I know the self? If perception means awareness through sense, the self is not perceived; for, there is no sense-organ directed upon it. Unlike my projected percepts which I can observe, I cannot observe the self by concentrating upon it; whenever I try, the self seems to elude me. I cannot, either, ask others to concentrate on my own self as I might ask them to concentrate on some one of my own projected percepts. My self is immediately experienced and entirely private (subjective). To it attaches memory; I can retrospect upon my own subjective experiences; I can also express in language whatever thereby I harvest. In the same way, other people can express in language their respective subjective experiences. Language, thus, becomes the important means by which we discern finite minds in one another.

The self intuits itself as having a 'whereness' within the body. That 'whereness' is not strictly localized. The self, however, never identifies itself with the body. The body is one of its percepts, like all percepts projected into three-dimensional space. Around its body, projected further away, is the environment.

The body is a coherent object with a definite contour extending all around the self; the self is always within that contour. The body is peculiar in one respect: it resents intrusion on the part of other spatial objects. The encroachment by any one of these gives rise to severe disturbances of the self, the disturbances which we call bodily pains. The self intuits the relation of belongingness of the body to itself. The body is its body, it is termed "mine"; the self seems aware of itself as embodied. While the spatial body has contour, shape, and size the self has none of these attributes. In this respect, it is the body's antithesis. The body has other properties lacking in the self. The hand, for instance, has color, warmth, smoothness, softness, hardness, weight, and what not; the self has none of these characters. These are all given by sense as properties of spatial things. No sense-organ being directed upon the self, it lacks even the general spatial attribute of extension; so it is also stripped of the special attributes of extended things. Though lacking extension, it has whereness. It is never *there* as the perceived things, it is always *here;* and here in a vague manner means within the body-contour.

The self, at different times, has differently salient phases, for instance, acting, feeling and perceiving. In the latter phase especially it finds itself surrounded by space; that fact, however, never gives to it itself extension. The self perceives the body and the world outside the body as one single spatial continuum in which it is, itself, the center. The external world, unlike the body, harbors no pain. Unlike the body, which is ever the same body never absent from the self, the things in the external world are many; they come and go, are met with and parted from.

The self is aware of itself not only as *here* but also as *now;* it endures in time. Time like space is a continuum, unlike space a continuum that moves. Within it are distinguished brief stationary cross-sections, each one of which is a "now." Every one psychological "now" is an integrated whole or unit, the "self" of the moment. It is a pragmatic "now," sometimes longer, sometimes shorter. Conation, one of the states of the self, deals with a "now" that has yet to come; it deals also with a "now" that has already been. Memory recalls the latter "now." The self, progressing through time, different of its phases alternately salient, does not lose or even question its own self-identity. Despite change, it is always the same self.

In regard to time as well as in regard to space, the self is always in the central position. Compared with things it is largely a negation of all that constitutes things; yet it is none the less a reality like they. "If either as fact is more unquestionable than the other," declares Sherrington, "it should be the unextended 'I', being the more immediately established. It has, it is true, one disability as regards evidence, it is impenetrably private. A spatial fact . . . can be attested by perhaps millions at first hand. The two therefore possess, as testimony, values of a different order . . . The 'I' which thinks itself within the body, regarding the body as having in it 'life', identifies that 'life' with itself. It *is* the life. The actions of the body are *its* actions." [23]

Mathematical thought progresses in the following manner. A certain set of postulates or premises are chosen and tentatively adhered to without question. Upon these, in order to establish whither they lead, is applied plain Aristotelian logic. Only then are the premises abandoned or modified when such a procedure leads to some absurdity (contradiction) such as, for instance, *A is not A.* In examining the natural philosophy of Köhler, I have tried to advance like a mathematician. I have tentatively accepted Köhler's premises — the ten predicates of entia. Adhering to the First Law of Scholarly Ethics, I have then logically inquired into the lead of these premises. I believe that such undertaking is a valid form of criticism, more valid than any criticism which on *a priori* ground insists upon a substitution of premises preferred by the critic for others preferred by the subject of criticism. The latter kind of criticastry means little more than saying: *you are wrong because I am right.* The quasi-mathematical investigation of Köhler's philosophy has led us, I believe, to three absurdities and to two instances of faulty logic on his part. The former are: (a) a laboratory experiment has neither observer nor reporter; (b) under certain circumstances there obtains a structural functional overlapping of the transphenomenal events in two anatomically separated human brains and (c) the transphenomenal event of which a certain phenomenal event is the corollary could never occur except through the interference of a Maxwell "demon." The two instances of faulty logic in Köhler's own reasoning would seem to be: (a) his claim that phenomenal transference attests the reality of the physical world. As we remember, it might as well affirm the reality of a transphenomenal mental world; (b) his tautological reasoning in attempting to establish the larger physical field of which the organism — in a stable state of high potentiality — would be a part.

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[23] Charles S. Sherrington, *Man on his Nature,* p. 336.

Turning to the natural philosophy of Sherrington, it is evident that his drastic statement on psychophysical interaction: *the theoretically impossible happens,* implies a too limited conception of theory. For it indicates that, to him, theory is exclusively physico-chemical theory. If influences exist in nature which are not in accord with that kind of theory, that is to say, which are not explainable by energy transformations within the world of the energy-systems, this can only mean that the physico-chemical theories do not suffice to cover nature in toto. No doubt, sometimes a broader theory will be formulated that will take into account all intercommerce in the universe. The fact that such a theory has not as yet been forthcoming makes psychophysical interaction seem like a riddle, but, we surmise, only for the present. Any one standpoint to the mind-body problem contains its riddle, the (X) of each respective one having merely a different locus. It is easy to read into Köhler's philosophy the notion that *form* or *Gestalt* is the primary cause both of macroscopic physical event and of phenomenal event. To be sure, such a supposition contains its imponderable or (X). In case Sherrington's statement had read: *the presently theoretically impossible happens,* his statement would probably have been more valid.

Despite the crudeness of expression referred to above, the unbiased reader will no doubt feel that Sir Charles, when he describes the psychological self speaks truly to nature. The biased reader may object that what he says is not scientific. The latter verdict could be correct only in one sense, namely, that the mind or self is incommensurable with our concept of the physico-chemical energy-scheme. That matter is frankly admitted by Sherrington himself. But, incommensurability with the energy-scheme does not necessarily make the mind-concept unscientific. If psychological science, instead of sycophantically living on borrowed concepts, honestly attempted to describe in its own terms what naturally falls within its domain, a description in these terms, if true to facts, would be good scientific description. The finite mind should not be condemned *a priori* as Köhler has condemned it. There is a further consideration: not only as psychology proper, but also as philosophic wisdom, the mind concept deserves a right of way.

CHAPTER IV

FURTHER REFLECTIONS UPON THE NATURE OF THE PSYCHOLOGICAL SELF

WE HAVE examined the terms in which Köhler describes the experienced or phenomenal self — that self which he largely identifies with the body-percept. We have observed also how Sherrington, realizing that we might perceive our body, acknowledges a deeper non-perceived and so non-extended self or mind which is immediately experienced and felt to intend and initiate conative acts; the partly perceptible body or organism becomes to him but an instrument in the service of the finite mind causing these acts.

In early summer 1939, I submitted to writing some reflections upon the psychological self, reflections which appeared in print the following year.[1] At that time, though it had been published a year earlier, I had not read Köhler's philosophical volume, *The Place of Value in a World of Facts.* Neither was I familiar with Sherrington's Gifford Lectures which, albeit delivered in the year 1937-38, were not available in book-form until 1941. Since my reflections of 1939 are pertinent to the discussion of the ideas of Köhler as well as of Sherrington, I recapitulate the more salient features of the reflections adding a few comments of comparison.

Suppose, as a matter of inquiry, we adopt the attitude of observing our own phenomenal extension — our body-percept if you like, or, as I have called it, our *subjective extended self.* Though such an attitude is extremely artificial, it is possible for everybody to adopt. In order to appraise the issue of our observation we would have to choose what might be called an epistemological standard or reference point on an imaginary scale. Suppose that as a matter of convenience we consider our body as it objectively exists within its natural "overall," the skin, our epistemological standard of comparison calling it plainly the organism or (O). (We realize — though it cannot be helped — that Köhler would voice objection to such a denotation.) The question, then, arises: Is ever our subjective extended self felt to be congruent with the standard (O)? I have endeavored to demonstrate that it rarely is. On the contrary, our subjective extended self presents very marked deviations from that standard; it shows not only subjective expansions beyond the standard (O) but also subjective contractions making it less than the standard (O). The expansions I have called the (O+)-phenomenon, the contractions the (O—)-phenomenon. It should be noted that other people perceiving us attain an idea of our spatial extension and that their idea, which we shall call our *objective extended self,* does not manifest corresponding fluctuations. In other words, whenever A apprehends B (another person) as spatially extended, B is relatively constant whereas, whenever A apprehends A (himself) in that manner, A is variable. Expansion and contraction of the extended self is a subjective, not an objective phenomenon. There seems to be a certain lawfulness in the fluctuations of a person's experience of himself as spatially extended.

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[1] Helge Lundholm, "Reflections upon the Nature of the Psychological Self," *Psychol. Rev.*, 42, 2, 1940.

It seems as if, during activity, the experienced or subjective, extended self tends to expand and to include the tools or implements which it applies and controls. This illusionary (O+)-phenomenon is definitely more conspicuous whenever the employment of the tool or implement requires effort on your part. The latter, however, is valid only within limits; for, whenever the effort required becomes so intense as to interfere with the effective control of the tool, the (O+)-phenomenon disappears; whenever, on the other hand, the effort required by the application of the tool is only slight, the (O+)-phenomenon — though not absent — is less distinct. If you use a crowbar to remove a heavy stone, your extended self — as you experience it — expands to include the crowbar, the world around you beginning at the place where the weight of the stone challenges your effort. Similar effect occurs, I believe, not only when we use manual tools — like the crowbar — but also when we employ receptive tools — such, for instance, as a microscope — the use of which requires some effort. If our tools are clumsy and remain ineffective in spite of strong effort in handling them, the (O+)-phenomenon breaks down. For example, you throw down the too heavy crowbar and curse it. In some measure the (O+)-phenomenon occurs even when your effort in applying an implement is slight. This is indicated by a variety of modes of speech. For instance, you say: "I turned on the light." What you actually did was turning a switch while the current liberated produced the light. Nevertheless, your report of the act suggests the expansion of your subjective self to include a set of auxiliaries which have been under your control. A similar example would be when, after having used the telephone, you say "I called up New York." If, in any one of these cases, you should fail to obtain the effect desired, that is to say, if, in the first case, you should fail to produce light by turning the switch, or if, in the second case, you should fail to reach New York despite repeated attempts, then, the (O+)-phenomenon is likely to disappear. A. D. Ritchie seems to have realized the (O+)-phenomenon as well as that which conditions it when he writes: "In so far as I am active, myself is where my body is, in fact is my bodily activity [Sherrington, as we know, would have contested that supposition and so would have Stout and McDougall]. But it is not only my body it is any instrument I am using . . . . We are where we act and we are the activity of that which acts. The external world is what we act on, regarded as separate and distinct from our body and its tools . . . . It is interesting to notice that the boundary between myself, my body and my tools, on the one hand, and the external world, on the other, is a fluctuating one depending chiefly upon the way the causal series that I initiate turns out. . . . As long as the car runs properly it is part of me but as soon as it breaks down it is repudiated and becomes part of the external world. This is so to some extent even in the case of other persons. If Smith in London is acting as an agent carrying out instructions then I say 'I ordered so and so,' though Smith did the actual ordering."[2]

Whenever an auxiliary is completely self-regulating, that is to say, when no effort on your part is required in order to make it pursue its function, the (O+)-phenomenon seems to be negligible. It does not apply, for instance, to the automatically regulated air-conditioning system in your house, though this system is an auxiliary in the service of your desired comfort.

I have illustrated what I have called the (O+)-phenomenon, the expansion, under certain circumstances, of the subjective extended self to include part of that which — from the viewpoint of our chosen standard of extension — is environment. Instances of the (O+)-phenomenon could be easily multiplied.

Let us, however, turn now to the opposite, the (O—)-phenomenon, namely, the contraction, under certain circumstances, of the subjective extended self to exclude parts of our standard (O). Ritchie who recognized the (O+)-phenomenon has recognized — in a general way — the (O—)-phenomenon as well. "When we are passive in sense awareness," he declares, "the body is part of the external world . . . . Myself shrinks up into something inside the body [cf. Sherrington's notion of the non-extended self ever and always central within the contour of the body] . . . . Everything outstide my body including the outside of my body is public in the sense that others can perceive it as well as I can . . . . The body has an ambiguous position. As far as I am active it is part of me, as far as I am passive it is part of the external world."[3]

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[2] A. D. Ritchie, *The Natural History of Mind,* pp. 198-99.

The (O—)-phenomena fall into two groups or types: (a) loss of a part with projection, and (b) loss of a part without projection. Here are a few examples of the former type.

Suppose you are reclining in a chair, your legs stretched out in front of you within your field of vision. Suppose, further, that a little kitten is playing with your shoe-laces and that you passively watch it with amusement. In this attitude of repose you might well experience the whole scene before you, including not only the kitten but your feet and part of your legs as well, as outside you — your own limbs belonging no longer to you but to the world around you. A second interesting instance. Once, dozing peacefully in a hammock, my eyes half-closed, I suddenly became slightly frightened by a black object in front of me. A moment later, I discovered that the object was my own foot. In numerous instances when you simply compare in some respect or other, a visible part of your own body with an object outside you, as for example, when you try to ascertain whether the moon looks larger or smaller than your hand, you are very likely to project your own limb into the environment, to experience it as a part of your surrounding.

In all these instances of (O—)-phenomena, the characteristic condition under which they seem to occur is comparative bodily relaxation. This is true not only of the first two instances but also of the comparison case. For, as soon as the holding of your hand against the sky produces fatigue and experience of bodily effort, the (O—)-phenomenon disappears and the hand is again absorbed into your subjective bodily self.

Functional paralysis of members of the body, as they occur in certain cases of hysteria and as they can be induced by hypnotic suggestion, may properly be considered as (O—)-phenomena of type (b). The hysterical patient or the hypnotic subject does not feel the member as real. Its belongingness to the subjective extended self seems, in a way, to be lost. The condition of the disorder is a complete inability to direct effective effort into the control of the member. As (O—)-phenomena, the functional paralyses would be instances of type (b), because the lost member is not projected into the environment.

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[3] *Ibid.*, pp. 199-200.

The fact that bodily relaxation seems to be the condition under which the (O—)-phenomenon takes place makes it interesting to compare this phenomenon with the total loss of awareness of one's own extended self that sometimes occurs during waking relaxation. Such instances, involving no projection of the standard organism (O) into the environment are — like the paralysis — (O—)-phenomena of type (b). Perhaps some of the readers will be familiar with the following experience. You are reclining in perfect comfort, eyes closed. You are not asleep; you may be day-dreaming, or passively reminiscing, you may even be attempting to solve a mental problem such as a problem of mathematics. You lose in such a degree the awareness of your own extended self that, when you desire to move, for a moment you are unable — as it were — to localize your own body and its members. As a consequence you cannot control them. The paralysis is only transitory and is rapidly resolved.

In connection with the (O—)-phenomenon, it is of interest to observe that our autonomic physiological systems which, normally, function without felt effort hardly ever are experienced as parts of our subjective extended self. (Breathing, when obstructed — that is to say, whenever, like in asthma, its smooth functioning requires effort — might become a very vivid part of the subjective extended self.) That — being an exclusion from the subjective extended self of parts of the organism — might well be regarded an (O—)-phenomenon; insofar as the excluded parts are not projected into the environment, the phenomenon would be of type (b). Its occurrence seems to conform with the general law manifested in the case of the total loss of awareness of one's extended self as well as in the case of the functional paralysis, namely: no felt effort in total or partial bodily control, no awareness of the body or of parts of the body. It is an interesting parallel that one's internal autonomic systems as well as one's external self-regulating auxiliaries should not become incorporated into one's subjective extended self.

So far, we have discussed deviations of the subjective extended self from our standard, *i.e.,* from the boundary of the organism (O); these deviations constitute the (O+)- and the (O—)-phenomena. The fifth of our six basic predicates of common sense asserts that the terms in which one individual apprehends himself — in our present connection his extended self — sufficiently resemble the terms in which other people apprehend him to make possible and to aid cooperation. If that postulate is valid, it follows that there must be a number of occasions when a person's subjective extended self and his extended self as heeded by others — we have called it his *objective extended* self — approach congruence. When is this? As a person's objective extended self remains relatively constant, our inquiry really concerns the determination of the conditions under which his subjective extended self conforms with the former self. The reply to this question is very simple. Whenever a person is overtly active and feels his efforts being harmoniously expanded in effective control of his own bodily members — perhaps as the Greek athletes expended them in contest or the Olympian Gods in play — then his subjective and his objective extended selves would approximate one another.

Though our experience of ourselves as spatially extended is vague, it reveals, as we have seen, certain interesting lawful features.

It is of considerable interest that the condition upon which the boundary of the subjective extended self depends, when conforming with the objective extended self, is the same as the one upon which the boundary of the expanded subjective self depends; and, in the negative sense, the boundary of the contracted subjective self, notably, felt effort effectively applied to the control of means to an end. In the case of the expansion of the subjective extended self, or the (O+)-phenomenon, the felt effort is effectively applied to the control of auxiliaries outside the organism, whereas, in the case when the subjective and the objective extended selves conform, the felt effort is effectively applied to the control of the bodily members or organs. In this connection it is also of interest to recall that completely self-regulating extraneous auxiliaries, the functioning of which requires no application of effort on our part (our automatically regulated air-conditioning system), as well as completely self-regulating internal auxiliaries, the functioning of which is also pursued apart from felt effort (our autonomic physiological systems), are not apprehended as parts of the subjective extended self.

The similarities which I have indicated in the previous paragraph might lead one to consider the members and the organs of the body, in a certain sense, the auxiliaries of a self that is more fundamental than the subjective extended self; the expansion of that basic self, whether to include the body alone or the body plus extraneous auxiliaries, would then be of the same nature as the expansion we have called the (O+)-phenomenon, and the condition of the expansion would be the same as the condition of the latter, that is to say: the felt effort applied effectively to the control of means to an end. Such a consideration raises a very important question: What would be the nature of that fundamental self. We know Sherrington's reply: the immediately experienced finite mind. We shall pursue, however, our problem in our own way. It requires the analysis of certain aspects of the subjective self which have not been as yet considered but which are by far more significant than its extension.

No doubt, the most important aspect of the self is the immediately known conative self which realizes ambitions and consecrates effort to the fulfilment of ideals. Every normal person is aware of himself as a conating being; this aspect of his self we shall call his *subjective striving self.* His fellowmen also are aware of him as a striving being, their awareness of him to be called his objective striving self. The resemblance of subjective and objective striving selves asserted by the fifth predicate of common sense is, as a rule, only distantly approximate; however, a select few of one's fellowmen — those with whom one is continually in the most intimate contact — might learn to know one's striving self with sufficient accuracy and completeness to make them able to predict one's conduct. This knowledge might be called the knowledge of one's character; character, as McDougall defines it, being that which "gives stability, consistency, harmony, predictability to conduct; that in man which makes him trustworthy, dependable."[4] One's character, as recognized by others, is apprehended by oneself in the terms of consistency and endurance of one's striving, and unity of one's dominating ambition or ideal. Inherent in one's experience of the permanence and unity of one's own endeavor are, by necessity, one's memories.

The enduring unity of one's subjective striving self might break down during pathological state. The cases of break-down, as observed by medical psychologists, support the proposition that the most fundamental aspect of subjective self-hood is the unity of striving. On this matter McDougall writes: ". . . The core of personal identity, the foundation of our belief in our own reality and continuity, is the experience of purposive striving . . . of putting forth effort . . . of resolving and acting, of pursuing a goal; which experience is fundamental and unique . . . This immediate awareness . . . together with memory, the memory of our past strivings, is the ground of the belief in our reality as enduring entities. What is the evidence for this view? . . . we may invoke the evidence of pathology. In cases of dual or alternating personality of the fully developed kind, we always find two changes: First, a discontinuity of memory; secondly, some radical alteration of the conative tendencies. The changed or secondary personality may have knowledge of some of the past experience of the normal personality, but does not remember it as his own experience; he knows of it merely as he may know of yours or mine. And his system of impulses and desires is quite other. He has a distinct system of sentiments or conative trends. He desires and strives to achieve other goals. It is, in fact, the rise of some system of desire, incompatible with the system that constitutes the core and essence of the normal personality, that leads to the conflict which issues in dual personality . . . . Pathology illustrates our point in another way. There are patients who become afflicted with a 'sense of unreality.' Such a patient feels that nothing is real, not even himself. This seems to be due . . . to lack of desire, of impulse, of conative energy. Through exhaustion (perhaps by reason of internal conflict) the patient's conative energies are sapped; he no longer responds with strong impulses or desires, and all things become unreal . . . Descartes' famous dictum . . . needs revision; not 'I think, therefore I am' but 'I strive, therefore I exist,' is the foundation of all belief."[5]

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[4] William McDougall, *The Energies of Men,* New York: Scribner, 1933, p. 186.

My earlier survey of the subjective extended self prompts me to some further reflections upon the three types of pathological cases to which reference is made in the passage quoted: (1) the cases of alternating personality with amnesia, (2) the cases of alternating personality without amnesia, and (3) the cases of feeling of unreality.

In all cases of alternating personality there seems to have occurred a splitting of the normal subjective striving self, a splitting accompanied by a loss of reciprocal balance or control of parts. One of the disintegrated parts is experienced by the patient as his own striving self, the others may not be experienced at all, or they may be experienced as projected, that is to say, as independent objective striving selves. The former is the case whenever reciprocal amnesia accompanies the alternations, the latter whenever no such amnesia is present. Any one alternating self equals the normal subjective striving self minus the other alternating selves. In other words, any one alternation represents a contracted subjective striving self. This contraction I shall call the (S—)-phenomenon, indicating, in this way, its parallelism with the (O—)-phenomenon, that is, the contraction of the subjective extended self. As we shall soon see, the (S—)-phenomena — like the (O—)-phenomena — might be of an (a) or of a (b) type, *i.e.,* they might or they might not involve projection.

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[5] William McDougall, *Outline of Psychology,* 1923, pp. 370-375.

In case of alternating personality with reciprocal amnesia (an (S—)-phenomenon of type (b)), each phase of alternation, or, each subjective striving self, is ignorant of the others. Thus, no projection can occur. The import of these cases, as well as of the ones without amnesia, would seem to be that systems of impulses that cannot be controlled might be lost as aspects of the subjective striving self. The (S—)-phenomenon in the amnesia cases is closely parallel with the pathological instance of the (O—)-phenomenon: the functional paralysis of a bodily member. It might even be called the paralysis of a member of the subjective striving self.

The cases of alternating personality which do not involve amnesia differ in certain respects from the amnesia cases for, in the former — in a manner — each subjective striving self is aware of the others, but, it is not conscious of these as partial subtractions from the normal subjective striving self. It knows them as projected, actually apprehending them as other striving selves, or, objective striving selves. There are two features of particular interest in these cases.

(1) The loss and projection would seem to constitute a

homologue in the sphere of the subjective striving self of the (O—)-phenomenon, type (a), in the sphere of the subjective extended self. The conditions of the two phenomena also would seem to be similar but not identical, the (O—)-phenomenon being conditioned by a complete absence of application of physical effort to the lost part, the (S—)-phenomenon by a complete loss of ability to strive toward, or to exert mental effort or initiative toward the attainment of certain ends.

(2) The projection is in no measure a projection in the spatial sense. For, the patient, though he experiences his alternating selves as objective striving selves, maintains that these, whenever they are dominating, occupy his own body. This is a remarkable instance of that subjective distinction of the finite mind from its body-tool upon which Sherrington so emphatically insisted. A negative and a positive implication is inherent in the state of affairs described: (a) *the subjective extended self is of relatively little significance for the experience of subjective self-hood,* and (b) *the experience of subjective self-hood paramountly depends upon striving or conation.*

In the cases of feeling of unreality, there obtains a loss or, rather, haziness not only of the patient's subjective striving and his subjective extended selves but, also, of the totality of his environment including all his fellow-men. Feeling of unreality, as far as we can judge, is the result of a general lowering of the intensity level of the patient's total conative life, due frequently to exhaustion by mental anguish and conflict. In a certain sense and degree it parallels one of the (O—)-phenomena of type (b), notably, the total loss of one's awareness of one's own subjective extended self during complete repose in a waking state.

The general significance of the reflections submitted lies in the fact that they force into prominence felt striving as the ulterior generator of our experience of subjective self-hood; the consideration of the feeling of unreality cases being of additional interest in that they suggest, not only the dependence of our experience of subjective self-hood upon striving, but, also, the dependence of all experience of the world around us upon conation. That dependence, I believe, is supported by evidence from every-day life. We know that, whenever we strive toward a well-defined goal, our striving seems to impose a selective restriction upon our experiencing at the time. More especially, we are aware of our goal and of objects and events related to it, that is to say, on the one hand, of means to the desired end, on the other hand, of obstacles counteracting our effort to achieve. This, in the positive sense, illustrates the dependence of our experience of the world around us upon our mode of striving at the time — the same dependence which — in the negative sense — was generally indicated by the feeling of unreality cases.

In discussing the (S—)-phenomenon, I have begun with a survey of pathological states; this is because these offer very conspicuous illustrations of the phenomenon. There are, however, many occurrences in everyday life which indicate that, in a less pronounced degree, the (S—)-phenomenon is fully normal. For instance, we all have had moments of weakened self-control during which we have committed acts that later we regretted. At such times, on retrospection upon our acts, they are prone to seem strangely unreal; but not only our acts seem unreal, we ourselves as we committed them seem unreal. How likely are we to exclaim: "I was not myself when I did it!" It seems as if the impulse that had prompted our deed is no longer a part of our subjective striving self. I see no reason why we should not regard instances of this kind at least incipient (S—)-phenomena of type (b).

Whenever we refer to contractions of the subjective striving self, we refer to the contraction of a magnitude that is not spatial but, rather, of the nature of value or import. The same is true when we refer to expansion of the subjective striving self. Is there, in this sense, an expansion of the subjective striving self; in other words, is there an (S+)-phenomenon as well as an (S—)-phenomenon? If so, what are the characteristic conditions of the expansion of the subjective striving self?

As the preparation for inquiry into this problem, let us recall that the core of our character as apprehended by ourselves is the consistency and endurance of our striving, the unity of our dominating ambition or ideal. Let us also recall that lacking unity of strong urge leads to conflict which is likely to result in a contraction of the subjective striving self, sometimes in pathological alternations of personality. From these facts we might logically infer the conditions of the expansion of the subjective striving self. But, we need not infer these conditions, they are altogether too evident to common sense. The conditions we have in mind are unquestionably the following: Whenever a number of people cooperate in a genuine endeavor to further one and the same goal, each one exerting the best of his effort in its accomplishment — whenever this is the case, the subjective striving self of any one member of the group is experienced as expanded, as incorporating the striving selves of all the collaborators. Accordingly, in such instances of cooperation, each subjective striving self approaches congruence with any one objective striving self; from which follows also that each subjective striving self presents the highest possible degree of congruence with each subjective striving self in the group. We have, in other words, the highest possible degree of resemblance posited by our fifth and sixth predicates of common sense. To such an active union of men, the much discredited concept of a "Group Mind" would, if ever, apply.

Several trends in the reflections here recapitulated from my article of 1939 seem to converge upon one and the same conclusion, notably, that immediately experienced self-hood is remarkably independent of our awareness of our extended body. My lines of argument thus meet the argument of Sir Charles Sherrington. The *experienced self-hood* is evidently the same as that which Sir Charles calls the *recognizable mind.* The independency of the recognizable mind of the spatially projected perceived body was emphatically asserted by him. Sir Charles was not aware of the support his proposal would receive from the special pathology of alternating personality cases. Other pathological evidence, however, he brought forth in sustenance of the proposal. ". . . the sensual awareness accompanying the bodily act . . . is in some instances, by disease or injury, stripped away . . . . But the motor act is still evoked and consciously . . . The 'I' still experiences itself in acting . . . the motor act executed by the insentient limb is clumsy. That it is executed at all consciously 'at will' is here the point. The launching of it as a conscious act . . . indicates that this 'I-acting' is not derived from sense-perception but is directly given."[6]

Sherrington makes a comparative reference to the behavior of apes whose fore-limbs have been made insentient artificially. "The animal, accustomed . . . to climb a rope or the cage side for offered fruit . . . comes forward and raises the insentient arms to climb. But the uplifted arms miss their object . . . . They wave almost wildly above the head . . . . The limbs are too clumsy. But they refuse defeat. The unsuccessful act is repeated again and again. For the attentive observer conviction grows that . . . a willed act is being enacted . . . by an individual acutely conscious of his own 'willing,' and acutely aware that the bodily act as it comes to pass fails of being the act which the 'I-willing' set out to compass . . . The 'I-doing' and the act it *would* do, seem still vividly identified together. It is the executive fulfilment of the act which fails."[7]

Sherrington's proposal as well as my own reflections echo the thought of the Scotch tradition in psychology; they are in full harmony both with Stout's distinction between "active tendency" and "effort," and with McDougall's distinction between "direct awareness of conation" and "kinaesthetic sensory experience," as quoted in the preceding chapter.

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[6] Charles S. Sherrington, *Man on his Nature,* pp. 328-29.

[7] *Ibid.,* p .329.

CHAPTER V

THE STATUS OF THE PSYCHOLOGICAL SELF IN FIELD-PSYCHOLOGY

My friend invented once a carrousel.
It was a strange unseemly thing because,
Instead of turning round in tasteful circles,
It took its jagged course in wicked squares.
What did the humble people think? Alas!
How wonderful to be thus tossed about,
Instead of following the Circle's route.

FIELD PSYCHOLOGY tends to reduce the import of human action propelled from within, that human action which we call conation. The term field psychology applies to two very different kinds of study, to phenomenal study, on the one hand, to the study of the overt behavior of living beings on the other. Common to both is the notion that the properties of any one thing or event depend upon a larger total situation of which the thing or event is a part; that total situation is the field. Any one change anywhere in the field changes all parts of the latter exactly as if it upset the equilibrium of a homogeneous whole.

When surveying philosophies with and without the psychological self, I choose two thinkers of great distinction, each one to represent respective type of philosophies: Sherrington and Köhler. In a similar manner, I shall here choose two distinguished psychologists to represent respectively the phenomenal field study, on the one hand, and the behavioral field study, on the other: Köhler and Lewin. Both are members of the Gestalt school of psychology. Though, perhaps, the concept of field-psychology is slightly broader than the concept of Gestalt-psychology, Gestalt-psychology is always field-psychology. It is also always dynamic, that is to say, it deals with field-events resulting from the equilibration of or the tension-reduction in the field.

Köhler and Lewin, though each a Gestalt-psychologist, are quite unlike one another in their thought. This difference lies not merely in the fact of the former being largely interested in the phenomena, the latter in conduct, but also in theoretical foundations. To Köhler, for instance, the hypothesis of phenomenal-neural isomorphism is the most pregnant working hypothesis in psychology as well as a basic doctrine in his philosophy of nature; in contrast to this, Lewin is all but unconcerned with that hypothesis even with nervous action in general.

The phenomenological field studies so brilliantly engaged in by Köhler and his friend and collaborator, Kurt Koffka, were originally inspired by a historical experiment of Max Wertheimer; the experiment on the Phi-phenomenon. The Phi-phenomenon is the appearance of motion when stationary stimuli are presented in succession in two neighboring positions. It is most conspicuous in the perceptual field of vision but it obtains also, in a less striking measure, in the perceptual fields of audition and of touch.

Among the leading Gestalt-psychologists all of whom came to settle in the United States — all of whom but one deceased — Wertheimer, thus, was the paterfamilias inaugural, Koffka the brilliant enthusiast who wrote much and well, Köhler the accomplished philosopher who elaborated the theory and philosophy of isomorphism, and Lewin the rugged individualist who chose his own way and who did not in all respects belong. Koffka, in a style that is at the time charmingly naive and temperamentally volcanic, describes as follows the birth of Gestalt-psychology: ". . . It happened at Frankfort on the Main early 1911. Wertheimer had just completed his experiments on the perception of motion in which Köhler and I had served as the chief observers. Now he proposed to tell me the purpose of his experiments, of which, as a good subject, I had been entirely ignorant . . . On that afternoon he said something which impressed me more than anything else, and that was his idea about the function of a physiological theory in psychology, the relation between consciousness and the underlying physiological processes . . . In two words, what he said amounted to this: let us think of the physiological processes not as molecular, but as molar phenomena. If we do that, all the difficulties of the old theory disappear. For if they are molar, their molar properties will be the same as those of the conscious processes which they are supposed to underlie. And if that is so, our two realms, instead of being separated by an impassable gulf, are brought as closely together as possible with the consequence that we can use our observations of . . . [experience] and of behavior as data for the concrete elaboration of physiological hypotheses. Then, instead of having one kind of such processes only, we must deal with so many as there are different psychological processes, the variety of the two classes must be the same."[1]

Gestalt theory in psychology maintains that experience as well as behavior are structurally and functionally patterned or organized and that, whenever incomplete, they tend toward completion and precision (prägnanz). In its widest sense — as we have seen in the third chapter of this volume — the theory becomes a philosophy of nature; the macroscopic physical world, the world of the living and the world of the appearances all consist of gestalten having achieved or tending toward a state of stability and regularity. Köhler himself, before he formulated his philosophy of nature made a study of physical gestalten and their laws.[2] Commenting eighteen years later upon this work accomplished in his early thirties, he wrote: "In details, this investigation no longer corresponds to our present knowledge of certain facts in physics and electrophysiology. But its main content is, I believe, still correct."[8]

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[1] Kurt Koffka, *Principles of Gestalt Psychology,* New York: Harcourt, Brace, 1935, p. 53 and p. 56.

[2] Wolfgang Köhler, *Die physischen Gestalten in Ruhe und im stationären Zustand,* Erlangen: Weltkreisverlag, 1920.

A gestalt is always an organized unit over and above its parts. As such it has attributes that cannot be derived from the latter. This is considered true whether of a physical or of a physiological or of a phenomenal gestalt.

Several references to Köhler's phenomenology have been made on earlier pages. In his view, a phenomenal field is an autogenic autochthonous unit in which phenomenal contexts (gestalten) segregate and distribute themselves in accord with laws inherent in the phenomenal world itself. Isomorph events of segregation and self-distribution within the transphenomenal brain are the correlates of the phenomenal occurrences. The phenomenal contexts can be roughly divided into two classes: (a) contexts of indifferent belongingness and (b) contexts of requiredness; the latter are contexts of a higher order of complexity than the former — to them attaches a phenomenal *ought.* I believe that the percepts *per se* would be phenomenal contexts of indifferent belongingness; they are reified and treated as things which in their genesis are independent of any perceiving mind. Among the percepts belong the phenomenal self which is identified with the body-percept. The phenomenal contexts have properties some of which appear to be the properties of the phenomenal self, others to be the properties of environmental phenomenal things. The former, in a sense, are thus subjective, the latter not.

Since we are here venturing to demonstrate that field-psychological phenomenal study tends to minimize the import of the conative psychological self, we shall choose for further examination only such aspects of Köhler's phenomenology as most conspicuously illustrate that tendency. This is the case with his doctrine of phenomenal requiredness. In all instances of phenomenal requiredness, phenomenal vectors emanate from one part of the field to another either with apparent acceptance or with apparent rejection of that other part. Whenever the vector is one of apparent rejection there is implicit in the phenomenon a tendency of correction. Such properties of contexts of requiredness, viz., acceptable, rejectable, fitting, unfitting, interesting, demanding, to be corrected, and whatever in different cases we may call them, are all Gestalt or Ehrenfels-qualities no one of which can be derived from any one separate part of the context; it obtains exclusively in virtue of their vectorial conjunction.

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[8] Wolfgang Köhler, *The Place of Value in a World of Facts,* p. 206.

The isomorphic transphenomenal brain-events which coincide with the phenomenal requirednesses — more especially with their vectors — are forces acting through brain-space. In so far as the latter, together with the re-equilibration of the roof-brain as a whole, affects motor "centers" in the brain, the organism will behave; this behavior, in turn, is concurrent with isomorphic changes in the phenomenal field, changes which relieve whatever phenomenal stresses adhered to the Ehrenfels-qualities: tendencies of approach or reproach or of correction, etc. In the transphenomenal brain-field as well as in the phenomenal field obtain, then, mutually isomorphic events of stabilization. Since the behavior of the transphenomenal organism effects changes in the extra-cerebral larger physical field of which the organism is a part and since these changes are relatively isomorph with the brain events as well as with the phenomenal events a relative stabilization of the larger field also ensues.[4]

The contexts of requiredness fall into three classes: *subjective-objective, objective-subjective,* and *objective-objective.*

Köhler suggests that we borrow a term from mathematics and physics and speak of interest as a *vector.* Phenomenally that vector extends from a definite section of the phenomenal field. If phenomenally the interest is *mine,* that section is the body-percept. It reaches also to a definite part of the field. It might be qualified in many different ways but this is always true that by the vector the phenomenal self either accepts or rejects another section of the field. Whenever interest is taken in any phenomenal part of the field that latter part acquires new properties, viz., value-attributes. Subjective phenomenal interest is the only phenomenal context in which the phenomenal self enters as an active agent. Thus, it is the nearest quasi-approximation to conation that Köhler achieves and that quasi-approximation is hardly conation at all. Will and intent are only phenomenal homologues of the vectors of physics. As such they are in no manner able to influence natural events, they are not causal agents in nature; my will cannot raise my hand. Goal-directed action guided by experience exists only phenomenally. In the transphenomenal world where all natural events take place and in which these have all their determining causes there are no purposive events.

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[4] Cf. Wolfgang Köhler, *The Place of Value in a World of Facts,* p. 358.

Objective-subjective as compared with subjective-objective requiredness shows merely a reversal of vectorial direction. Here the vector emanates from an environmental phenomenal object reaching toward the phenomenal self with either acceptance or rejection. A quality of demand issues, as when the traffic-officer holds up his hand to prevent you from crossing the street, or when a few moments later he waves to you to proceed. In the former instance the phenomenal object: traffic-officer, sends out a vector of rejection towards the phenomenal self; in the latter instance, the same phenomenal object sends out a vector of acceptance toward the phenomenal self.

Contexts of objective-objective requiredness occur in the realm of percepts as well as in the realm of thought; the terms of thought — like the percepts — are reified. Köhler reproduces a curve which is progressing smoothly except in one place where it is interrupted by a slight irregularity or "bump"; he tells us that here the smooth parts of the curve reject the irregular part;

phenomenal vectors emanate from the former rejecting phenomenally the latter; in this rejection would be inherent the tendency of correction. Another instance which is not Köhler's. Two circles are presented simultaneously in the phenomenal field, the one of a certain color, the other of one or the other of its harmony colors (each spectral color has two harmony colors). In such a phenomenal situation the two colors fit; a vector of acceptance emanates from any one of the colors to the other with the incipient phenomenal tendency perhaps, of mutual approach.

Any one context of objective-objective requiredness might, though it need not, enter into a larger context of requiredness. This would be the case whenever a phenomenal vector emanating from the phenomenal self reaches out toward the already existing context of objective-objective requiredness either accepting or rejecting the latter. In this larger context, then, we would have a subjective-objective requiredness superimposed upon the objective-objective requiredness. New Ehrenfels-qualities would arise, qualities of subjective evaluation. Referring to objective-objective requiredness, Köhler writes: "But after all, is it not subjective requiredness which . . . has been wrongly 'referred' to objective data? *We* are disturbed when a sequence of chords ends with the wrong note. *We* do not like to look upon a necktie which does not fit the suit of its wearer. Obviously here the self is not a neutral observer of alleged objective requiredness. Why then should these cases not be reduced to subjective requiredness? The observation is correct to some degree. We do not remain neutral in such situations. But why should we? Among the objects which the self may have before it there are contexts of many different kinds in some of which parts appear as right or wrong, required or the contrary. This means that in such situations there is, first, an objective context with its requiredness and, secondly, another larger context which, besides the objective context, contains the self."[5]

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[5] Wolfgang Köhler, *Ibid.*, pp. 98-99.

Köhler continues: ". . . It is not the subjective aspect of requiredness in human striving and interests which makes requiredness compatible with facts. Instead it is the observation that certain facts do not only happen to exist, but, issuing as vectors in part of contexts, extend toward others with a quality of acceptance and rejection. *That in many examples such vectors issue from the self is a relatively minor point* . . . After this has been realized we shall be less inclined to regard the subjective case as particularly simple, as necessarily basic in the treatment of requiredness. There is no *a priori* reason why this should be so or why, if there are other cases, the subjective variety should be given an outstanding place. If our phenomenological attempt has been adequate, no such restriction to subjective requiredness and no theoretical accentuation of it can be defended. It seems to be a special case only."[6]

In chapter two, is quoted from Köhler's writing a passage to this effect: ". . . the inductive procedure of science with all its hypotheses and constructions (that is to say, *thought*) *is* a subject matter of phenomenology. This does not mean, however, that the content of such assumptions should be mixed with purely phenomenological propositions."[7] At the time I questioned the validity of a distinction between thought and content of thought, here, I submit my complete shortcoming in understanding such a distinction. I could easier conceive of the whole universe as sheer thought, but, from such presumption I am prohibited by common sense. Köhler's sentence is pregnant in one respect: it asserts that thought is phenomenal. Thus it bridges over to that remaining aspect of Köhler's phenomenology which is here to be discussed, namely, his proposal that between the terms of thought *per se* obtains an autochthonous phenomenal requiredness. His proposal, of course, intimates a reification of thought similar to the reification of percepts. To some, the reification of percepts might be tolerable; the reification of thought, which makes thought independent of a thinking agent, is more difficult. Nevertheless, Köhler declares that ". . . we come upon objective requiredness in matters of knowledge or thought. The similarities between red, blue and purple are such that the place of purple is . . . The context asks for completion. If, as a completion, the words are given 'between the red and the blue,' their meaning fits the context; they are *right*. Or again: 'Things equal to the same thing are equal to each other.' The last part of this statement is seen to be *right* in the context of the beginning. Any other case of correct thought might be given as an example. All would show the same characteristics. Precisely as in the case of subjective valuation, objective requiredness means that vectors issuing in part of certain contexts extend beyond these parts and refer to other parts with a quality of acceptance or rejection. These other parts themselves assume the dependent properties of *right* or *wrong*. Whatever other differences there may be between logic, aesthetics and ethics — and there are important differences — this general trait seems to characterize requiredness everywhere. Even timeless truth, as our last examples show, involve no exception. Probably no theory would appear satisfactory and final in which the basic contrast between mere facts and requiredness had to be interpreted differently for the case of logic on the one hand, for aesthetics and ethics on the other."[8]

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[6] *Ibid.*, p. 100. (italics mine)
[7] *Ibid.*, p. 70 n.

Köhler's proposal of an autochthonous requiredness between the terms of phenomenal thought is alluring and in full consistency with the rest of his phenomenological doctrine. I was so impressed by it that, in 1941, I undertook to analyze in the terms of objective-objective requiredness a number of pages of the thought transcribed into word-symbols in his own volume, *The Place of Value in a World of Facts*. However, I soon abandoned the task, not so much because I questioned its theoretical possibility but, rather, because it led to the most awkwardly complicated formulations. There were also many disturbing factors which interfered with the progress of the undertaking. A particularly confusing factor was a frequently recurring little word, the personal pronoun 'I'. That little word seemed to stand for no context whatsoever that had any place in the phenomenal world. It certainly never seemed to stand for the phenomenal self or the body-percept. Would it possibly stand for some construct like the epistemological self; or, would it by chance stand for the finite conative mind? Any affirmation of either of these two alternatives would be incommensurate with Köhler's phenomenology as well as with his philosophy of nature.

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[8] *Ibid.*, pp. 97-98.

Köhler's phenomenological doctrine would seem intrinsically consistent. Nevertheless, viewing it as *one* only in the assembly of other phenomenological doctrines, one can hardly escape certain reflections. Reference has been made (cf. chapter II) to the fact that different phenomenologists seem to have had a leave-way of expressing personal opinion more especially in regard to the self-imposed restrictions which they have considered necessary in order to arrive at the appearance pure. These self-imposed restrictions, to choose only a few examples, are different in the phenomenologies of Hume, Tichener and Köhler. The respective self-imposed restrictions determine the different postulate sets in the different kinds of phenomenological expositions. This leave-way for subjective opinion might make one question the objective validity of any phenomenal study. Some one may remark that, if that be the case with regard to phenomenal study, it would be equally the case with regard to all scientific studies. We have seen in the course of cultural evolution a considerable number of types of physics; we have seen an even larger number of types of psychology building respectively on postulate sets which oftentimes are mutually incompatible with one another. Such a state of affairs, then, might make us question the validity of all sciences. Maybe it should; or better:

maybe — while hopefully awaiting a solution — we should realize that the answer to the ultimate questions concerning the nature of the universe have not as yet been found.

Another reflection upon phenomenological study: in each phenomenological doctrine, the self-imposed restrictions and so the postulate sets characteristic of it seem to harmonize remarkably with a respective broader scientific or even philosophical trend salient at the time of its advancement. In turn, that observation leads one to suspect that, perhaps, phenomenological study, which appears inherently flexible and vague, might have been used by various writers to rationalize a beforehand petrified philosophical or scientific conviction. Hume's phenomenological doctrine fitted the associationist theory that had been brought down to him from earlier generations of psychologists. It also fitted the theory of discrete conduction of nervous impulse in the brain which in turn fitted the atomistic theory of the universe as a whole. Titchener's phenomenological doctrine fitted the theory of discrete nervous conduction as well as the general atomistic philosophy of nature. Köhler's phenomenology is in harmony with the theory of the molar, rather than discrete microscopic, nature of events in the roofbrain (the idea originally Wertheimer's) as well as with the doctrine of specific laws for many molar events in the extra-cerebral trans-phenomenal world. Most important of all, it fits the hypothesis of neural-phenomenal isomorphism. In order, even in the most general sense, to permit the latter hypothesis, the phenomenal world has to be exactly as Köhler describes it, *i.e.,* his self-imposed restrictions have to be precisely what they are. The phenomenal field has to be conceived as an autochthonous autogenic world of its own, its objects have to be reified — the percepts as well as the thoughts. And, in turn, this couples with it the *a priori* necessity of repudiating as phenomenal the conative finite mind allowing as the phenomenal self exclusively the body-percept. The immediately experienced psychological self or finite mind is not of the order of the percepts; no sense organ is directed upon its apprehension and consequently, unlike the percepts, it is not extended. This being the case it can have no isomorph correlate in the spatially extended transphenomenal brain, nor can it have any relatively isomorph correlate in the extra-cerebral physical world. For these reasons — though phenomenally the most direct of all experiences — the finite recognizable mind has to be sacrificed. In the third chapter of this volume, I have attempted to show the inevitable consequence of that sacrifice, namely: no phenomenon can possibly have an observer.

Wherever different trends of thought, having been elaborated on the basis of different postulate sets, with intrinsic logic lead to different conclusions we have — if we desire to achieve a relative appraisal — to apply to the different leads the criterion of "reasonableness" as founded in refined common sense. Such an appraisal is not academic, it is practical. It involves no criticism in the scientific sense; rather, it is an effort to achieve valid opinion through philosophical orientation. It is by no means tantamount to saying: "You are wrong because I am right," for, instead it is the bringing of all in practical concerns indispensable knowledge to bear upon the idiosyncrasies of one-sided academic theories.

In order to illustrate the role in the appraisal of academic theory of the criterion of "reasonableness," I shall present the events of human thought and knowledge in a manner different from Köhler's, leaving to the reader himself to judge which one exposition seems more valid from the standpoint of practical indispensability, *i.e.,* of common sense.

Once, as children, we all sat on the school-bench; among the problems with which we had to struggle at that tender age were the problems of syntax, that is to say, of the construction of sentences. We were taught that a simple sentence numbered at least three terms: *subject, predicate* and *object;* this would be the case whenever the predicate happened to be a *transitive* verb — in case the predicate were an *intransitive* verb, the object term — a noun or its compeer — would be replaced by a *predicate-completion* — an adverb or equivalent qualifying the verb. Some of us strongly feel that if, during a couple of thousand years, civilized languages have formulated thought in the terms of subject, predicate and object (or predicate-completion), such a state of affairs must mean something psychologically; it must mean that behind that scheme of formulation lie deeply rooted convictions of human common sense reflecting basic truths about human nature.

On that assumption, let us analyze the simple sentence of common sense: *I know it,* a transitive sentence. To begin with, let us consider only the psychological implication of the predicate term and of the object term, *i.e.,* the implication of: *know it.* Evidently they imply a distinction between *contents known* and the *acts of knowing contents* the former symbolized by the object term (it), the latter by the predicate term (know). In language, the object known is denoted as a rule by a noun or by its equivalent pronoun, whereas the act of knowing is denoted by one or the other of a number of transitive verbs respectively connoting the special mode of knowing concerned, verbs such as: perceive, remember, imagine, conceive, infer, induce, deduce, intuit, or the like. All contents known are *intransitives* in that they are more or less self-contained modes of being or becoming, each content expressing only a state or an action limited to itself. This property of contents, of course, does not preclude that some of them might be relational; as such, nevertheless, they are segregated wholes, intransitives. The sum total of known contents might be called the *known world* or even the *world of the intransitives.* The description of that world requires as far as possible a reifying terminology. All acts of knowing are transitives in that they aim at or intend intransitive contents.

When a content is known, the corresponding act of knowing is rarely — if ever — simultaneously present in consciousness. How, then, can it ever be known that there is an act of knowing? The answer is: because the act of knowing itself might become a content in the world of experience. This is affirmed by the layman in the common colloquialism: *I know that I know it.* Whenever that is the case, some original act of knowing has changed from a transitive into an intransitive. *Qua* act, it was a transitive; *qua* experienced content, it is an intransitive. As an intransitive, the act of knowing is always a relational content in the sense that in it is absorbed another content, namely, the content it intended as a transitive; nevertheless, it is a self-contained existent or segregated whole. While transitive knowing *intends* or *purposes* a content, intransitive knowing *is* an intention and a content coadjunate in one single context. Even in the concept of *knowing,* as a generic intransitive, is absorbed an indeterminate dependent content. Throughout my argument, I use the verb *to intend* as the broadest collective or generic term for transitive doing.

From Köhler's point of view, language would violate phenomenology. For instance, it uses in order to denote a simple intransitive, *i.e.,* a phenomenon, expressions which literally comprise also a reference to the act of knowing. This is of great interest because it indicates that common sense as reflected in language does not support Köhler's phenomenology. Introducing the act of knowing it implies — in most cases even denotes — also the agent that knows, that is to say, the psychological self. The statement *I see the apple* might thus intend to denote *the sheer apple percept,* while literally it asserts the being or intransitive existence — as the content of a secondary cognitive intention — of *the act of perceiving the apple.* Similar instances occur in the sphere of remembering. The statement *I remember my beloved in the cherry orchard* might be intended to denote merely a motive or theme in the phenomenal world of memory of its author, while literally it denotes instead the cognitive act of reminiscing as the intransitive content of a secondary act of knowing. The true denotation of the memory content in case would be: *my beloved was in the cherry orchard.* The tendencies in the field of memory and perception are equally conspicuous in the sphere of higher cognition: the acts and the intended contents of *judging* and *inferring* are thus frequently introduced into the statements of a phenomenal situation in which they were not present, viz., *He did not come — I judge he must be ill.* The inferred supposition set forth in the latter part of the sentence is not the statement of a primary content proper. The predicate *I judge he must be ill* literally describes the act of inferring, that is to say, it recounts the intended content of a secondary act of knowing, not the content primarily inferred; the latter would be merely and more adequately epitomized in the words: *he must be ill.* I maintain that these tendencies tell us something about human nature. Köhler thinks that by elimination he might arrive at the essence of the appearances. If he is doing that he loses at the same time the essence of man.

Whenever a transitive act of knowing changes into an intransitive, a new transitive act of knowing is born, *I know that I know it.* As in turn the latter act of knowing might change into an intransitive *I know that I know that I know it,* and so forth, the potentiality of infinite accumulation is evident. However, no one transitive act of knowing ever shares with its own intended content simultaneity in consciousness; that is to say, the transitive knowing of one moment and the intended intransitive content of the same moment are never by simultaneous appearance co-ordinated in consciousness or experience. That being the case, how does it occur that a certain act of knowing having turned into the intransitive content of a secondary cognitive act, is, as such, co-ordinated with its own specific content? I believe the solution of that question to be that — though not directly — transitive act and intransitive content are indirectly co-ordinated, the mediator being the *agent* without whom no acts are possible. Any one act of knowing — while intending a content or object — is also, at the same time, intended by a subject. This fundamental human conception of knowledge — despite any predicates of academic phenomenology — accounts for the formulation of the common sense sentence: *I know it.*

What is the subject or agent intending acts of knowing? The language of the great men of letters as well as that of the laymen points to a self or mind (soul), the "I," as that agent. Representing common sense the man of letters and the layman alike intuit the self or mind as *a being capable of striving, knowing and feeling; of knowing itself — its own striving, knowing and feeling: and of carrying in the terms of its memories, its own continuity and unity.* As such, the self or mind — a phenomenal intransitive immediately known by itself — is a part of the world of experience; in that capacity it serves as the mediator through which all individual acts of knowing become co-ordinated with their respective individual contents.

When I examined philosophies with and without the psychological self (ch. III), I did not need take into account every aspect of the two philosophies which were chosen as representative of their respective types: the philosophy of Sir Charles Sherrington and the philosophy of Wolfgang Köhler. All that needed be examined were selected features of these relevant to the question at issue. Considering Sherrington, for instance, I did not discuss the role the finite mind plays in his social philosophy, whereas, heeding Köhler, I did not present in any detail his evolutionary argument in support of phenomenal-physical isomorphism. When, in the present chapter, I reviewed the status of the psychological self in Köhler's phenomenological discourse, again, I needed only advert to certain parts of his phenomenology, more particularly such parts as deal with the contexts of phenomenal requiredness; these were more pregnant than others to the problem under examination. As I continue to inquire into the position of the psychological self in the field psychology of Kurt Lewin, like in the earlier instances, I shall need scan only certain features of his psychological doctrines.

Lewin's psychology is not easy to understand. His terminology is odd and, I suspect, not altogether consistent. In venturing to draw a picture of his system, I am coerced to let myself be guided by whatever I can read between the lines of his exposé. In case this should lead to misrepresentation, I shall have to blame possible obliquity at least partly upon lacking clarity in Lewin's writing; I vouch that my effort to visage the gist of his views is genuine and that I am aiming not at finding faults but at seeing light.

Kurt Lewin sets out with an *a priori* bias. He is convinced that the casting of all the sciences upon the Galileian rather than upon the Aristotelian pattern of thought will reap a valuable harvest.[9] Galileo advanced the field theory, Aristotle the classificatory theory of natural events. Interpreting the behavior of an object, the field theory would pronounce it determined by the structure of the field of forces of which it is a part, whereas the class theory would argue that it is determined by the inherent nature of the class of objects to which it belongs. Lewin's ambition seems to have been to mold psychology upon the maxim of the Galileian principles of interpretation.

Lewin's psychology concedes the reality of a person or subject and of its environment; the latter is qualified as physical, on the one hand, and as social, on the other. But neither the person nor the environment are conceived as transphenomenal actualities in the Köhlerian sense, *i.e.,* the person is not the transphenomenal organism, the physical environment is not a section of the transphenomenal physical world, and the social environment is not the total of the transphenomenal organisms of other people environmentally present to the person. Instead, taken all together, they constitute what Lewin calls the "psychological field." What is the psychological field? It is very difficult to extract from his writing a clear answer. Two negative predications, alone, appear certain: it is neither a brain-field nor is it an extra-cerebral physical field. Offhand, one would think that a psychological field — in so far as it is not entirely homogeneous, as it is not — would consist of configurations of psychological objects and events. This does not endorse its absorption into Köhler's phenomenal field which I believe would be far too narrow for Lewin's purposes. For instance, I get the most distinct impression that the "psychological person" in Lewin's system by no means can be identified with the "body-percept" in Köhler's phenomenology. Could it be then that the psychological field is some complex state of affairs as apprehended in all its functional possibilities and potentialities by a person or subject — apprehended by him as the situation in which he himself moves about or might move about. In this tentative definition of the psychological field the term apprehend is meant to denote a far broader act of knowing than the one of perceiving, viz., you may apprehend that from which you have turned away — that which is behind your back — despite the fact that at the moment no sense organ is directed upon it.

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[9] Kurt Lewin, "The Conflict between Aristotelian and Galileian Modes of Thought," *J. Gen. Psychology,* 1931, V, pp. 141-177 (trans. D. K. Adams).

Whereas a transphenomenal object exists independently of anybody observing it, it would seem that a psychological object, being psychological, would have to be experienced by somebody or — in case we reify it — would have to belong to somebody. From the standpoint of Köhler's phenomenology this, as we have seen, is not necessary; nevertheless, I feel convinced that Lewin would sanction my proposal. To whom does the psychological field belong? Only one answer would be possible: to the psychological person or subject. That reply has an important implication in regard to psychological experimentation which we shall now examine.

Lewin scorns induction in science, *i.e.,* he rejects generalization from many individual observations even when such a generalization is statistically valid and reliable.[10] This would seem to intimate that theory and law are derived from hypotheses that in their origin are sheer ingenious intuitions on the part of the scientist, the extreme implication being that, by nature, all hypothesis is *a priori.* From *a priori* hypotheses deductions are made: assuming an hypothesis to be true, a certain crucial laboratory situation, designed expressly to allow it being tested, would result in a certain behavioral event. To Lewin, all verification whether of hypothesis or of theory or of law is a laboratory task. In any laboratory experiment in psychology there are present at least two psychological persons, the *subject* and the *experimenter.* Restricting to the laboratory situation our question: to whom does a psychological field belong, we are compelled to recognize two psychological fields, one belonging to the subject, the other to the experimenter. Then we have to beg another question: since, in the laboratory situation, the psychological experimenter as well as the psychological subject is the tenant of his own psychological field, what is the relation between these two psychological fields? Are they identical; do they overlap; or, are they entirely separate? The reply requires an inquiry into the genesis of the psychological field. A passage from Lewin is here pregnant: "Exactly the same physical object may have quite different sorts of psychological existence for different children and for the same child in different situations. A wooden cube may be one time a missile, again a building block, and a third time a locomotive. What a thing is at any time depends upon the total situation and the momentary condition of the child involved. Similar considerations hold also for the social factors. In this dependence there becomes clear a matter of fundamental psychological importance, namely, *the*

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[10] Kurt Lewin, "Environmental Forces in Child Behavior and Development," Murchison, *Handbook of Child Psychology,* 2d ed. rev., Worcester: Clark Univ. Press, 1933, p. 95.

direct relationship between the momentary state of the individual and the structure of his psychological [*field*]. That the psychological environment, even when objectively the same, depends not only upon the individual character and developmental stage of the child concerned but also upon its momentary condition becomes clear when we consider the relation between environment and needs."[11]

The passage quoted is not as clear as one would wish. It contains at least one striking inconsistency or contradiction. The sentence beginning: "That the psychological environment, even when objectively the same . . ." implies that psychological objects *per se* would have enduring intransitive existences. This is entirely out of tenor with the remaining part of the paragraph. The unfortunate sentence may be due merely to a slip on the part of its author or, possibly, on the part of the translators. To attain meaning and consistency with the rest of the paragraph it would have to be re-formulated as follows: "That the psychological environment, *even when its physical* (transphenomenal) *substratum remains the same . . .*"

Assuming that my correction actually implies what Lewin has in mind, I venture to make three conclusions from his statement: (1) that — though the statement refers only to child life — it has also application to the adult; (2) that events within the psychological person in some manner "generate" his own psychological field; that conclusion shall be substantiated shortly; and (3) that an entirely or nearly inert psychological person would have no psychological field; the last conclusion would be illustrated by a person in deep dreamless sleep.

Let us now return to the laboratory situation. Since in that situation there were present two psychological persons, the subject and the experimenter, and since each of these is the tenant in his own phychological field, we asked the question: what is the relation between these two psychological fields?

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[11] Kurt Lewin, *A Dynamic Theory of Personality, Selected Papers,* New York: McGraw-Hill, 1935, p. 76.

Are they identical; do they overlap; or, are they entirely separate? We know now (conclusion (2)) that in a measure events within the psychological person "generate" his own psychological field. Since there is very slight likelihood that the events within the psychological subject would be identical with the events within the psychological experimenter there is accordingly very slight likelihood that their psychological fields would be identical. The behavior of the psychological subject would be a part of the psychological field of the experimenter, but the psychological field of the former could never be directly observed by the latter. Consequently, from the standpoint of the experimenter, the psychological field of the subject, the field upon which his behavior is dependent, is in a measure a fiction. That consideration which follows directly from the postulates of the Lewinian hypothesis would throw doubt upon the possibility of all psychological experimentation. Though academically fatal, from the practical standpoint this apparent adversity is not so serious, because all psychological experimentation implicitly or explicitly leans upon the basic predicates of common sense which I have formulated in the second chapter, more especially upon predicates three, five, and six. As an aid to the reader, I restate them here.

(3) The terms in which one individual is aware of the world around him resemble the ones in which other people are aware of the same real world. Without that resemblance, joint effort on the part of members of a group could not occur; social hierarchies regulated by language would not be possible.

(5) Just as the terms in which one individual is aware of the world around him resemble the ones in which other people are aware of the same real world (third predicate), so do the terms in which one individual is aware of himself sufficiently resemble the ones in which other people are aware of *him* to make possible and to aid co-operative endeavor.

(6) Just as one individual's experience of himself resembles

other people's experience of him (fifth predicate), so do the terms in which one individual is aware of *his own self* resemble the ones in which other people are aware of *their own respective selves,* this resemblance being sufficient to make possible and to aid co-operative endeavor.

Whenever a physical object moves towards another physical

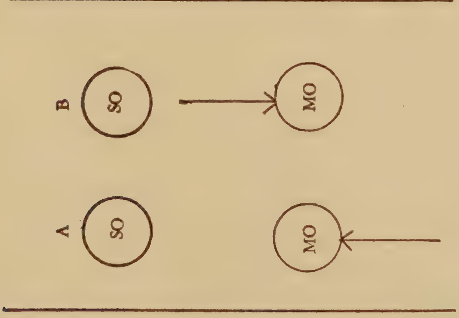

Fig. 2
Galileian physical field-situation

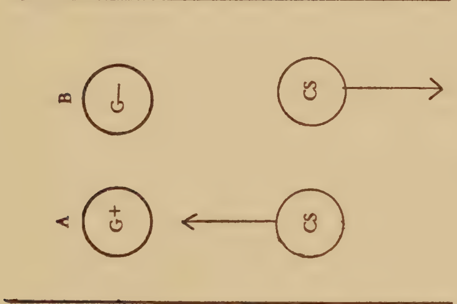

Fig. 3
Situation according to conational psychology

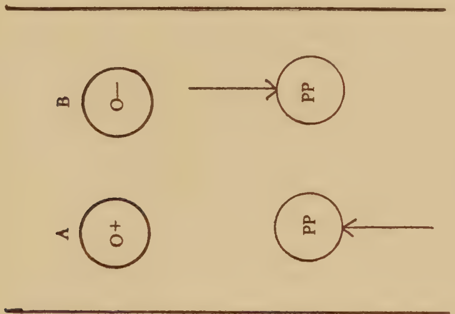

Fig. 4
Psychological field-situation according to Kurt Lewin

object that is stationary the latter is supposed to attract the former; whenever a physical object moves away from another physical object that is stationary the latter is supposed to repel the former. These are principles of Galileian field physics. If we use an arrow to symbolize the respective attracting and repelling forces of the stationary physical object we might express the respective physical situations as in the appended figures, (2A) and (2B); the stationary physical object is denoted as (SO), the moving physical object as (MO); the arrowhead represents the point of application of the force or vector, the length of the arrow its strength and the path of the arrow its direction. Contrary to Galileian physics, dynamic conational psychology would maintain that, whenever a living being prompted by striving, moves toward a stationary object, it moves toward it propelled by a force from within. Using, as before, the arrow to denote the force, we might symbolize, though far less adequately, the conational event as in the appended figure (3A); the arrowhead, that is to say the point of application of the force emanating from within would here be a point in space between the conative self and the desired object; the conative self we call (CS), the desired object or goal (G+). Whenever a living being prompted by striving moves away from a stationary object, it again moves away from it propelled by a force from within. In figure (3B) this situation is symbolically expressed. Here the denotation (CS) is retained for the conative self, the object from which it desires to escape is called (G—). The point of application of the force or vector is now a point in space on that side of (CS) which is exactly opposite to (G—).

When Lewin projects the principles of Galileian physics unto the "psychological field," he makes assertions such as these: whenever a psychological person (PP) moves in the psychological space toward a psychologically stationary object (O+), a vector emerging from (O+) attracts or pulls the former, (PP), toward itself. This situation is symbolized in figure (4A). The vector, as in the case of the field situation of Galileian physics, has its point of application on the side of (PP) that is furthest away from (O+), its direction being the path between (PP) and (O+). On the other hand, whenever a psychological person (PP) moves in psychological space in a direction away from a stationary psychological object (O—), a vector emanating from (O—) applies to a point on that side of (PP) which is nearest to (O—), its direction being in the path between the two. Figure (4B) symbolizes this situation.[12]

I have stated precisely the feature in Lewin's doctrine through which his psychology — like all other "behavioral field" psychologies — tend to minimize the import of the conative act and so of the conative self. By placing the forces which influence the psychological person largely in the environment, Lewin gains his psychological field, but, he loses all acts propelled from within. The gaining of the field, we assume, satisfies his *a priori* Galileian bias. Perhaps, however, a statement to the effect that Lewin entirely loses the conative self might be too extreme. For, there obtains, in his psychology, a singular feature which places him in an ambiguous and perhaps inherently impossible position between conational psychology and psychology patterned on the model of physical science, more especially upon the physics of Galileo.

Whenever an environmental psychological object (O+) attracts a psychological person (PP), the psychological object is said to have a positive valence (Aufforderungs-charakter), that attribute of the psychological object being indicated by the

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[12] Those of the readers who are familiar with a work by Mr. G. W. H.—a work in which, among other Gestalt doctrines, the psychology of Kurt Lewin is examined—should not be confused by the fact that this author represents the simple dynamic situations symbolized in figure (4) in a different manner, in a manner that diverges from the representation in Lewin's *Selected Papers;* of the latter representation mine is a true replica. Since the translators of the *Selected Papers* were both pupils of Lewin in Berlin, and, since I know that they were in close conference with Lewin while making the translation, I judge that the representation in the *Selected Papers* as well as the representation in my own figure (4) is consistent with Lewin's thought. Why Mr. G. W. H., in a book that appeared in 1935—the same year as the *Selected Papers* were published—should diverge from the latter, I do not know. Intentionally, I make no precise literary reference to the work of G. W. H. This is to prevent confusion in those readers who are not familiar with it. Those who know it already will easily identify it from the remarks submitted.

(+)-sign attached to it. On the other hand, whenever an environmental psychological object (O—) repells a psychological person (PP), the psychological object is said to have a negative valence, that being indicated by the (—)-sign attached to it. How do environmental psychological objects become invested with these positive or negative valences? A passage by Lewin has been earlier quoted, a passage from which I ventured to draw three conclusions; the second of these reads: *events within the psychological person in some manner "generate" his own psychological field.* That general supposition is held to contain the explanation of the positive and of the negative valences possessed by environmental psychological objects. According to Lewin, these events within the psychological person (PP) are "needs," accompanied by "need-tensions." A need invests certain environmental psychological objects with valences whether positive or negative. By virtue of these the psychological objects respectively attract or repel the psychological person. I made a corollary conclusion from the passage, namely: *an entirely or nearly inert psychological person would have no psychological field.* If the latter be true, the need-tension within the psychological person "generates" not only the valences but also the percepts of the psychological objects; in turn this would mean that all objects in the psychological field are either positively or negative valent; in other words the psychological environment at a certain moment would consist exclusively of valent objects, valent either in the positive or in the negative sense. In some way, however, that conclusion of mine must be wrong, because we are told that a percept might set up a need-tension in the person, we assume, where no such need-tension was previously present. If that is correct it directly conflicts with my conclusion. The needs of the psychological person might vary in two respects, in regard to quality, on the one hand, and in regard to intensity of its tension, on the other. The strength of the valence of the psychological object, whether the valence is positive or negative, assuming other circumstances constant, varies with the strength of the need-tension. This is called the *Law of the Reciprocal Relation between Needs and Demand-characters.* What is here proposed tastes of a peculiar magic which is very difficult to understand. Lewin defends his assertion by what he considers human experience as expressed in the sentence: "I desire a thing — *it* attracts *me*." That sentence would seem to be a little more than a verbal salto-mortal. Quite contrary to it is the true verdict of everyman's experience: "I desire a thing — *I* go for *it*."

Whenever the attraction or repulsion on the part of the psychological object leads respectively to a motion of the psychological person a decrease of the need-tension within the latter ensues. Here is where Lewin's theory comes close to the equilibration concept of all Gestalt-theory. But it comes even nearer to that conception when we view some other of its aspects. Tensions arise in the psychological fields as a whole. This for instance would occur when two psychological objects, one with a positive, the other with a negative valence, pull the psychological person with equal strength in diametrically opposite directions. Such a state of affairs would represent a tension within the total psychological field, a conflict situation to be distinguished from the need-tension within the psychological person *per se.* In the conflict situation the slightest displacement of the person might create a powerful vector perpendicular to the direction of the original vectors. This would solve the conflict either through the person generating a new psychological field on the level of reality — he undertakes a novel task — or through him generating a field of unreality, solving the conflict in fantasy. If any opportunity for the person of going out of the field is prevented by all-enclosing psychological barriers (obstacles), each one being a negative valence, complete confusion of the psychological field and of behavior ensues.

Lewin's psychology of obstacles and means need not here be further examined. Having pointed out exactly how and where Lewin loses the psychological self and thus discredits the conative act propelled from within, my task is achieved. Whoever is interested in a critical exposé of Lewin's psychology of obstacles and means might read McDougall's article, "Dynamics of the Gestalt-psychology III."[13] Unfortunately, McDougall is aiming at fault-finding rather than at seeing light and that reduces somewhat the cogency of his appraisal. Here, it need only be added that the appearance in the psychological field of psychological obstacles and psychological means, the former being invested by positive the latter by negative valences, immensely complicates the field. The final equilibration of the total field would, I assume, account for all the behavior of the psychological person (PP); the account would be in terms and principles molded upon Galileian Physics.

Lewin has a school of neophytes, who accepting his metaphysics, perform laboratory experiments. In a less measure the same is the case with Köhler. Köhler's followers, however, seem to be more interested in his methods of experimentation than in his basic philosophy, the philosophy of phenomenal-physical isomorphism. Despite the fact that the philosophies of Lewin and Köhler alike do violence to very evident facts of human experience, their converts seem quite vigorous. In part it is to these followers that my mildly ironic poem heralding the present chapter humbly refers.

How wonderful to be thus tossed about,
Instead of following the Circle's route.

Having examined Köhler's proposal of autochtonous requiredness in the realm of thought, I submitted an entirely different view of human cognition, urging the reader to apply, in appraising the two, the criterion of "reasonableness" springing from refined common sense. The whole next part of this volume will be devoted to the presentation of a psychology different from the ones of Köhler and of Lewin. Again I ask the critic — when appraising the relative merit of these psychologies — to apply the criterion of reasonableness.

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[13] *Character and Personality,* V, 1936, pp. 61-82.

PART III

AN OUTLINE OF CONATIONAL PSYCHOLOGY

> Im Anfang war die *Tat.*
> —Goethe, *Faust.*

CHAPTER VI

THE GROWTH OF THE PSYCHOLOGICAL SELF: (I) CHARACTER

WE HAVE ATTEMPTED to build up a strong case for the supposition that the conative psychological self including its properties is a fundamental item of human experience which must be given heed by all psychological science; we have even essayed to show how psychologies which fail to offer that consideration of the conative self are bound to enter into oddities of interpretation that makes their systematic endeavors seem esoteric — many times downright absurd.

The psychological self of the human adult is not ready at birth; it has, in the case of each individual, its own ontogenetic history. Nevertheless, certain general principles in the growth of character can be set down. The adult self is the adult's *character*. The adult *personality* — a larger concept — comprises two further factors, *taste*, and *intellect* — each acquired. For the sake of clarity, the treatment of the growth of the latter has been postponed to a later section of our treatise. Here, then, it is with the development of character that we are primarily concerned.

What is the seed or raw material from which character grows? It goes without saying that conational psychology declines to derive character from reflexes. Instead, it postulates inborn biologically purposive dispositions which, independently of learning, express themselves in adaptive behavior. These are the instincts. The *instincts* can be defined as congenital tendencies to pursue certain simple biological goals upon the attainment of which depends the welfare of the individual or its species. The instinctive dispositions originate in the course of evolution as the safeguards of the continuation of life. They constitute the biological inheritance which men share with the animals. Whereas many biologists have adopted the hypothesis of instinctive dispositions in animals, many psychologists have repudiated the application of the hypothesis to man. Much paper has been wasted on that debate; we shall waste no more but merely state the argument against and the argument for instincts in man. Observing that, in the newborn human child, most behavior seems to be random or non-directed, many psychologists have been led to the view that all precise direction of action is a matter of learning. This proposal is met by the counter-proposal of a spontaneous maturation of the instincts in the human child. Maturation is considered independent of learning, the suggestion being that, as soon as the bodily organs that are instrumental in instinctive behavior attain sufficient strength, purposively directed behavior will spontaneously appear. The mental disposition, then, is considered a reality at a time when its tool of expression, the body, has not as yet ripened for its tasks. The whole debate, of course, is very difficult of final reconciliation, particularly since experiments on maturation with human subjects can hardly be undertaken. In order to make the instinct-concept useful to its utmost potential we have to think of the instincts as cognitive-conative dispositions, that is to say, as dispositions not only to behave adaptively toward certain objects and situations but, also, as dispositions to perceive or become aware of the latter. I have myself insisted upon that point more emphatically than most other conational psychologists, some of whom — like William McDougall — thought that a very simple kind of perception of the order of *anoetic sentience* anteceded the evocation of the instinct, that simple perception becoming further qualified as to its meaning in the course of instinctive action. Since even the simplest act of perception is a mental act and since no mental act could exist independently of the working of some mental impulse, I have suggested that even the very simplest manifestation of cognition (knowing or perceiving) is the expression of an instinct already at work. In other words: it is a physical, mostly environmental situation, that activates the instinct, the first phase of instinctive activity being the act of knowing the biologically crucial object or situation. I shall endeavor to show later that only such a conception of the psychophysical relation can possibly allow a consistent conational theory of man. Some biologists who have adopted the hypothesis of instincts have repudiated the cognitive aspect of instinctive behavior; they have claimed, rather, that instinctive acts are blind — not accompanied by experience and consequently not guided by experience. Others have maintained that among the lower animals, the instinctive acts are blind, but, that when a certain level in evolution is reached they become conscious. That level, however, has not been exactly, or even approximately determined. Here, again, is a fruitless controversy. The view to which I have committed myself is that experience guides directed behavior on all levels of the animal kingdom, perhaps even on some levels of plant life. That view has an aesthetic appeal because it introduces unity into the multitude of life-manifestations. But, if I could bring to its support only its aesthetic attribute, it would be relatively poorly supported. It has in addition a common sense appeal. Although it is by no means indispensable in order to explain behavior, it makes the behavior of the infra-human beings — even the lowest ones — understandable. So-called explanatory hypotheses often consist of artificial fictions which are so distant from common human consideration as to bring explanation and understanding far apart (viz., the theory of tropism as applied to the explanation of the homing of bees). If there were any weighty evidence that the animals are not guided by experience, of course, my position would be very weak. There is no such evidence. Furthermore, there is neither any philosophical nor logical consideration upon which one can conclusively base the denial of such a guidance. It is upon the latter state of affairs that I wish to submit a few comments in indirect justification of the view which I prefer. I shall examine only guidance by perception, but my argument can easily be extended to include both guidance by memory, by affective experience, and by belief.

The argument must begin with a consideration of the grounds upon which adult human beings infer perceptual guidance in their own likes; for this inference, after all, might be no less faulty than the inference of such guidance in species below man. It could hardly be denied nor even doubted that our appreciation of the reality of the mental process of perceiving and of guidance by perception is ultimately based upon our own individual experience of perceiving and of acting pertinently to that which we perceive. The naive assertions: *I see, I hear, I taste,* or generally *I sense,* are at the root of all affirmation of perceiving and of perceptual guidance, not only on the part of one self, but, also, on the part of other men. Attributing to others the ability of perceiving and of being perceptually guided, then, is always an inference; for, no man can be directly aware of any other experience than his own. Yet, the ground of that inference consists of a fairly vigorous set of analogies. Which are these? It would seem that at least three can be clearly distinguished.

(I) Every man knows that, on occasions, he himself indicates that which he perceives in spoken words, as when, for instance he says: *Look! a daffodil;* or *How do you do, Mr. X.* On other occasions, he may express the fact that he perceives merely in a diffuse ejaculation: a cry of fear or of pain, a burst of laughter, and so forth. Every man knows also that, on occasions, his fellow men give voice to similar vocal utterances, both of the articulated verbal and of the diffuse emotional kind. From these facts he infers that his fellow men experience, if not identically, at least similarly to himself; in other words, that they perceive.

(II) Every man envisages himself as the proprietor of a set of sense organs (eyes, ears, nose, tongue, and so forth); every man also accedes that the function of these in some fashion conditions his own perceiving. When his eyes are closed he does not see; when he has a nasal cold he does not experience odor, etc. Similarly, he recognizes that most of his fellow men possess the same kind of organs, and so his inference that his fellow men perceive is indirectly supported. That inference, no doubt, is further sustained by every man's appreciation of the *general* anatomical similarity between himself and the latter (the similarity that is independent of or additional to their community of sense-organs).

(III) Every man naively knows that, oftentimes, he acts directedly and purposively toward that which he perceives as, for instance, when he hastens towards the perceived shelter in order to escape the rain. On many occasions, he has also the opportunity of observing his fellow men acting directedly and as it were purposively towards certain things of which he himself is aware. From such particulars he educes a second support for the conviction that his fellow men, like himself, perceive these things and are guided in their activity by their perception.

The three criteria, then, on which we infer perceiving and perceptual guidance in our fellow men, are:

(A) Oral testimony, comprising two sub-types:
    (1) articulated speech testimony,
    (2) non-articulated, diffuse testimony;
(B) Anatomical similarity;
(C) Purposively directed activity.

The first (A) and the third (C) constitute what might be called the *criterion of the as if,* that expression being intended to indicate that, whenever, in any way, a human being acts as if guided by experience, we have a fair right to assume that he actually is aware of something and is guided by his awareness.[1]

It would seem proper that, if we wish to decide to our own satisfaction whether or not the infra-human living beings perceive and are guided by perception, we should let our decision rest upon the same criteria on which we infer such acts in our fellow men; that is, upon the criterion of anatomical similarity and upon the two criteria of the *as if*. How do these criteria apply to various levels below man in the scale of the animal kingdom? The answer would seem to be as follows:

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[1] Helge Lundholm, *Conation and our Conscious Life,* Durham: Duke Univ. Press, 1934, p. 31.

(I) No animal is capable of indicating perception by articulate speech, language seemingly being the property of man alone. But many of the higher animals are capable of a diffuse vocal expression, sometimes of a sufficiently differentiated note and timbre to make the unsophisticated human listener interpret it as the expression of perception, such as the perception of bodily pain, the perception of a threatening or of a satisfying situation, or what not. Below a certain level in the animal scale, however, animals are mute; or, at least, their vocal utterances are below the threshold of human apprehension.

(II) Many infra-human organisms present a distinct anatomical similarity to man. How far down in the scale we appreciate this similarity is to some extent a matter of education. Some observer may recognize it only where he can notice in animal and man an unquestionable community of sense-organs. But where does this community cease? A biologist will acknowledge a pigment spot on a speck of protoplasm as a rudimentary eye, whereas an uneducated person might refuse to accept the stalked eyes of some Crustacea as an organ of vision. One of my colleagues, in conversation, claimed to appreciate an anatomical similarity between all living beings from amoeba to man, this similarity lying in the fact that all living organisms are anatomical and functional wholes; this generosity would seem to stretch apperceptive synthesis to the utmost. However, it is not our concern to find an exact point in the scale of evolution above which anatomical similarity between animal and man is apparent and below which it disappears; all that is important to us is to appreciate that between man and a large number of species even low down in the animal kingdom such similarity is evident; similarity in this respect being apparent far below the level upon which vocal expression is observed.

(III) All living organisms behave directedly and, as it were, purposefully in regard to objects; this being true even of the simplest organisms: the amoeba, the paramoecium, the stentor and others, in whom the anatomical similarity to man, if any, is utterly distant.

If we summarize what has been said above, we find that, broadly speaking, the scale of the animal kingdom below man might be divided into three parts or levels, to each of which the criteria of perceptual guidance — valid with regard to our fellow men — apply differently. On the lowest level only criterion (C), purposively directed activity, applies; on the middle level criteria (B) and (C) both apply, that is, anatomical similarity to man, and purposively directed activity; and, on the highest level, criterion (A) applies in part as well as criteria (B) and (C); that is, on this level we observe diffuse — not articulate — vocal expression (A2), anatomical similarity to man, and purposively directed activity.

The sketchy survey of the animal kingdom here concluded has been entirely descriptive. What inference may be drawn from it in respect to perceptual guidance as a characteristic of animal life at large? None whatsoever. Even if we accept as correct the description, this does not by logical necessity compel us to any definite conclusion concerning the problem at issue. The three criteria of perceptual guidance were derived from human introspective experience. To every man's fellow man they all apply; they constitute the ground upon which every man confidently infers perceptual guidance in other human beings. To animals they apply only incompletely, the extension of their relevancy decreasing as we descend the animal scale; and this is exactly the reason why we are still left fully at liberty to take any attitude we wish toward the problem.

If we choose to consider full application of all the three criteria, (A), (B), and (C), necessary to justify the inference of perceptual guidance, then, we acknowledge such guidance only in man. If, on the other hand, we choose to consider partial application of criterion (A), diffuse vocal expression (A2), and full application of criteria (B) and (C) sufficient ground of inference, then we grant perceptual guidance to man and to some of the higher animals: mammals and birds. If, thirdly, we consider merely full application of criteria (B) and (C) necessary, then, we acknowledge perceptual guidance in man and in all animals within the level upon which anatomical similarity to man is apparent. If, lastly, we choose to consider criterion (C) alone sufficient ground of inference, only then do we acknowledge perceptual guidance throughout the animal kingdom. Since many plants behave directedly and since it has even been shown that certain jungle plants possess structures that anatomically and functionally seem to come very near to the nervous system of the animals, we might have to stretch our concession even below the level of animal life.

No particular one of these choices can be held logically more compelling than the rest. This being the case, the choice of attitude toward the criteria and their significance becomes entirely a matter of individual bias: scientific, aesthetic, philosophical, or religious. I, for one, have chosen to consider criterion (C) alone sufficient ground of inferring perceptual guidance in living beings including certain plants; that consideration permits me to acknowledge the continuity of the latter function throughout the realm of life. What is my bias? I have admitted it earlier; it is aesthetic.

Though my argument has been restricted to the perceptual act, and to guidance by perception, it can easily be extended to apply to all guidance by experience. Just as there is a *criterion of the as if,* upon which one may — if one so wish — infer perception and perceptual guidance throughout the animal kingdom, there are similar *criteria* which are relevant to memory and affective process, as well as to the process of believing; the criterion of memory being improvement in the performance of directed activity; the criterion of affective experience or desire, the apparent urgency of directed activity until a goal is reached; and the criterion of confidence or belief, the seemingly unhesitating approach to the goal.

Different conational psychologies have postulated different numbers of instincts. Since the instinctive dispositions are hypotheses one should use the greatest economy in hypostatizing them. But, since any doctrine of instincts is called upon to derive all adult human conduct from its postulates, the endorsement of too small a number of instincts carries with it difficulties. For, in attempting to derive human character from an unduly small number of instincts one is compelled to devise a large number of auxiliary "by-laws," each one equally hypothetical as the basic instinct. Sigmund Freud, who in his early writing recognized only one basic instinct, the sex instinct, in order to explain the development of character was obliged to introduce the concepts of oral, anal, and genital fixation of the libido, together with a large number of other hypothetical superstructures upon these. In case, on the other hand, you are too generous in assuming instinctive dispositions, you might come to share with the old faculty psychology of Gall and Spurtzheim the error of indiscriminate multiplication. An optimal number, then, would seem to be the ideal; that number would allow with relative ease the derivation of adult human character — at the same time, it would escape the extravagances of the old faculty psychology. Since the instincts constitute our racial inheritance which we share with the animals, and since unlearned instinctive behavior is more prevalent in animal species than in man, any doctrine of instincts should be based upon a careful observation and appraisal in the broadest sense of animal as well as of human conduct. The late William McDougall is rightly famed for having undertaken such a study.

McDougall's doctrine postulates fourteen *indispensable* instinctive dispositions; a few more have been added in his later writing but as these are not indispensable and as at least one of them is questionable they shall not be here considered. The instincts can be defined only in the terms of their biological goal and in the terms of the situation that provokes them. The mere observation of the overt behavior of a living being will not permit one to divine what instinctive impulse prompts that behavior. This is because in the human being and also in many animals the same type of overt locomotion and so the same type of executive abilities (McDougall's expression) are frequently brought into the service of a large variety of instinctive acts. If you merely see a man running, you do not know why he runs. He might be running in order to escape a danger, but, he might also be running because he pursues an enemy, or because he wants to be in time for dinner. Only the appreciation of the total situation allows us to diagnose his motivation. Consider furthermore that instinctive activity is not a stereotype. When, on various occasions, behavior is prompted by one and the same instinct, each cycle of action is not an exact repetition or replica of the rest. For, in different instances, the actions might become modified to meet different environmental circumstances. That flexibility is spoken of as the intelligent modification of instinctive behavior. It has been observed on very many levels of the animal kingdom. These intelligent modifications are not exactly learned. They seem to express, rather, a spontaneous insight into novel obstacle-means-end relations. Again, they make the sheer cross-examination of behavior useless for diagnostic purposes.

The fourteen indispensable instincts shall be briefly described; they shall be referred respectively to groups, in a manner that McDougall neglected to achieve.

Three of the instincts are definitely concerned with the nutrition of the organism: the food-seeking instinct, the instinct of food-repulsion, and the acquisitive instinct. The food-seeking instinct is probably the most primordeal of all instincts. It would seem to be even more basic than the sex instinct because it can be observed in simple cell-like protoza in whom sex-differentiation has not as yet taken place and where multiplication is a matter of division. The amoeba will pursue its food-object by directed behavior. The aim of that instinct is to secure food. Even in the realm of plant life, we know of certain species that lay traps by which they catch insects for the sake of devouring them; they, thus, apparently display directed food-seeking behavior. In the human child the food-seeking instinct is not highly specified in its object. This means that the human child will attempt to devour any object of a size that can be put into the mouth: a piece of chalk, a coin, a bolt, even a spike, or what not.

Certain animals, for instance, many species of cattle, whose food-seeking instinct — like the one of the human child — is not adequately specified in regard to its object, might accidentally eat herbs or plants which are poisonous and destructive to their organism. Prompted by the instinct of food-repulsion, these animals will spit out the obnoxious substances, even vomit them up. The human child is handicapped not only by an inadequately adjusted food-seeking instinct, but also by an inadequate instinct of food-repulsion; for, the human child might not only *fail to reject* inadequate food-objects: the chalk, the bolt, or the spike, it might also *reject* food-objects which are healthy for its organism, viz., spinach.

There are animal species who for natural reasons can obtain their food only during certain seasons of the year. In these species can be observed a tendency to gather and hoard food to be used at times when food is not available. The squirrel hoarding nuts would illustrate this primitive expression of the acquisitive instinct. Human children need not gather and hoard food. They are provisioned for all the year round. Nevertheless, there seems to appear in infants at a certain age a spontaneous tendency to collect things other than food-objects, nearly always things of *one* kind: buttons, labels, pieces of glass or what not. That tendency in the human child is perhaps expressive of the acquisitive instinct working in a useless or biologically obsolete manner.

Four of the fourteen indispensable instincts seem particularly to serve the furthering of group-life. The first of these is the protective instinct. Its aim, most primitively, is to feed, shelter, or otherwise protect the young of the species. It subserves the maintenance of the most primordial of all groups, the family group. In human children, the protective impulse might become directed toward any object that possesses the property of being frail, such as the doll, some little pet animal or what not.

But, other instincts serve the preservation of group life in a much broader sense. The gregarious or social instinct urges individual members of certain species to stay together or, whenever by some circumstance or the other separated from the group, to join it again. This instinct accounts for the adhesion of the group in all horde-species. In the human child, group-play would be prompted partly by the social instinct. Among men as well as among animals the group, sometimes, attains organization. This is the effect of the instinct-pair: self-assertion and self-submission. The tendency of the instinct of self-assertion is to dominate members of your species, whereas the tendency of the instinct of self-submission is to yield to the domination on the part of members of your species. The instincts of self-assertion and of self-submission are of different strength in different members of one and the same species. Relatively few have a strong self-assertive tendency, while many have a strong tendency of self-submission. The organization of the primitive group is the result of dominating members becoming leaders to which the rest submit. Leadership of that kind can be observed on the animal level, for instance, in the group-behavior of wild horses. A strong male member of the group seems to be the leader; to his domination the other members submit. Frequently, in a group — whether animal or human — two or more leaders of strong assertive tendency might appear. In such cases, since each leader frustrates or interferes with the assertive tendency of the others, fight is likely to ensue; in that fight rival leaders might be destroyed, or, the group might split into several, each under different leadership. Whoever observes the group-activities of human children (group-play) will easily identify the leader as well as the followers. In child-life, fight is likely to result from multiple leadership. It is interesting to note that, in the animal kingdom below man, we find the homologue of communism, viz., among bees and termites, of dictatorship, viz., among many of the higher horde-species, but, we find nowhere the homologue of democracy.

The sex instinct occupies a unique position; it cannot be grouped with any one of the other instincts. It is — in each species — activated by the presence of a member of the opposite sex and its aim is to accomplish the sex act. Ultimately, then, it serves the perpetuation of the species. Among the higher animals, the concept of a maturation of instincts would seem to apply, if ever, to the sex instinct. Sex behavior, it would seem, could not appear until, in the purely physiological sense, the genital organs have begun to function, an occurrence which — among human beings — would most commonly coincide with the termination of middle infancy. Freud's doctrine of infantile sexuality defies that notion; for, it claims that already at birth the total body of the little infant constitutes an erogenous zone any stimulation of which by the fondling hands of the parents produces in the infant sexual orgasm. That theory is the basis of the Oedipus-love situation and later of the Oedipus complex. Is Freud right? To many of us, his doctrine has not seemed sufficiently supported by evidence; to even more of us it has not seemed quite reasonable. But, who can tell?

The next group of instincts contains three: the instinct of escape, the instinct of pugnacity, and the instinct of appeal. These have been grouped together for reasons that perhaps might seem arbitrary, notably, because they can be observed many times to follow one another in a serial order. Like the instincts subserving the nutrition of the body, they are directly self-preservative — only indirectly race-preservative. The instinct of escape in each species is activated by certain objects or situations which threaten the welfare of respective individuals. It prompts the individual to run away from the threatening situation or to seek a more substantial shelter or protection from it. Objects that inflict bodily injury are the primitive evocators of the instinct of escape; as the impulse is evoked these objects become known as pain-inflicting objects. In the human child pain has much the same significance. The punishment or the threat of punishment in child-education constitutes an appeal to the instinct of escape. The instinct of pugnacity is activated by any object or situation that thwarts any one instinctive impulse already at work; it prompts the animal to destroy the obstructive object. In the human child the manifestation of that instinct can be observed very early. If you fetter the arms of a little child to its sides, the child will begin to struggle for freedom of motion. The instinct of appeal is provoked by objects or situations from which the animal cannot escape and from which it cannot free itself by pugnacity or fight. The instinct of appeal prompts the animal to cry out the cry of distress. That cry is tuned by nature in such a manner as to activate in other members of the species the protective instinct prompting them to hasten to the aide of its fellow member in distress. Many human mothers have been called to the bedside of their little children by their cries of distress. A remark was made that the activations of the three instincts here described are likely to accompany one another in serial order. I shall submit some observations of my own to illustrate the point in question.

Many years ago I spent late spring and summer with fishermen on a little island in the outer rim of the archipelago of Stockholm on the Baltic Sea. I developed an interest in the animal life on the island and on the waters surrounding it, particularly in the life of the large sea birds which had their hatching season on that latitude in late spring. There was a very large bird, a relative of the sea gull, but larger and partially of different habits from the latter, that particularly interested me. It differed from the sea gull not only in size but also in habits particularly in the food-seeking behavior. It did not, like the sea gull, dive for living fish; it fed on the dead fish and on other dead animals thrown up on the shore by the waves. It hatched its young on little rocks in the water away from the main island. One could always tell on which rocks there were young because over these the parent birds used to fly continually returning with food for these. As a rule three eggs were laid in each nest. I used to row out to these rocks and take the young birds away bringing them to a small specially enclosed area on the main island where I cared for them and studied them. Whenever I approached the rock where I expected young birds to be found, to begin with I could see nothing living. They had protective coloring and their bodies merged completely with the grey of the rock. Evidently their first reaction of escape was sham-death; they remained completely motionless. As by sheer chance I came near a nest the sham-death reaction gave way to running behavior. As soon as the little ones moved I right away saw them and so I could pursue them. When I reached my hands to get hold of them, it seemed that their escape reaction turned into pugnacity. They attempted to fight me, many times biting my hands bloody. Sooner or later I enclosed them in my grasp interfering with all pugnacious effort on their part. Then, and first then, they cried out the cry of distress. Instantly the parent birds circling above began to dive down toward my head as though to frighten me away with their powerful wings. My observation illustrates the serial order of the working of the three instincts, the instinct of escape, the instinct of pugnacity, and the instinct of appeal. Other observers, no doubt, have made analogous observations on other species. The serial order of the evocation of these three instincts constitutes the ground on which I class them together in a group.

The remaining group of instincts contains what one might call miscellanea. The instincts coordinated in that group do not relate to one another in any significant manner. They have been brought together merely because they do not properly belong to any of the other groups. They are: the instinct of curiosity, the constructive instinct, and the instinct of sleep.

The instinct of curiosity is evoked by the novelty of a situation or object, a novelty which does not elicit any other instincts — most particularly not the tendency of escape. It prompts the animal to approach the novel object as if to apprehend it fuller. Curiosity conduct is especially likely to turn into escape conduct as soon as the novel object in any manner behaves aggressively. Approach will then immediately turn into retreat. Human children, at the age when they begin to master language, spontaneously display their curiosity by indefatiguable questioning. Any adult knows that children might ask questions that many times not even the wisest philosopher could answer. Characteristic of the inquisitiveness of the child is its flightiness. Questions jump from topic to topic without the inquiry focusing steadily upon any major theme. The following anecdote is typical in this respect. A little boy had been put to bed and was supposed to go to sleep; his mind, however, was full of questions which he asked his mother, one after the other. Finally the mother wanted to interrupt his eager curiosity and told him that she would reply no more and that he must go to sleep. "Just one more question," pleaded the boy. The mother gave in inquiring what it was, whereupon the boy asked: "Is God married?" We do not know what the mother's reply was but, for a while it brought the child to quiescence. But, only for a shirt while. The boy again became restless and pleaded with the mother: "Just one more question." When finally the mother again yielded the boy asked: "Mother, how do you make a tin-can?" This illustrates the flightiness of children's questioning. To illustrate the difficulty of the questions they might ask, there comes to my mind how, some years ago, little Cookie Bumstead of the comic strips asked her father: "Daddy, who was my father when you were a little boy?"

The constructive instinct prompts the animal to build a nest or, a dam, or merely to dig a hole in the ground. The constructiveness of certain species like bees and some wasps, or certain birds, and — among the mammals — the beaver, is a real marvel of nature. The constructions might in different species serve different purposes: it might serve plain self-protection from threatening enemies; it might serve the hoarding of food for the harsh seasons of the year; it might also serve the protection of the young. A constructive device such as the web the spider weaves subserves the purpose of catching prey. Since the constructions by animals are auxiliary to the purposes of a large number of other instincts, I have hesitated to group the constructive instinct with any one special of the latter. Some of us think that, when, at a certain age, a little child is given building blocks, he begins fully spontaneously, that is to say, without drill, to construct, placing one block on the top of the other and so forth. If this observation is correct it would express the tendency of the constructive instinct, here — as in so many of the cases of instinctive activity in childhood — the instinct functioning on the level of play activity. Necessity for real adaptation in these instances has not as yet arisen.

The supposition that the act of going to sleep is an instinctive act was originally advanced nearly half a century ago by the Swiss psychologist Claparède.[2] McDougall has endorsed his proposal including sleep among the instincts; I have myself accepted it among the indispensable biological dispositions. A remarkable number of animal species sleep — keeping even the diurnal cycle of relaxation (sleep) and active effort. The aim of sleep is evident: restoration from fatigue contracted in any fashion whatsoever. The evocator would be some bodily condition of exhaustion which — as the instinct begins to function — becomes known as the awareness of tiredness.

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[2] Edouard Claparède, *Esquisse d'une Théorie Biologique du Sommeil,* Geneva: Kündig, 1905.

This concludes the brief description of the fourteen indispensable instincts.

McDougall questions the hypothetical validity of an instinct of imitation, the instinct which has been endorsed by many biologists and psychologists. Rightly, he points out that nowhere, either among animals or among men, do we find truly imitative behavior. The nearest to imitative behavior that I have ever observed in human beings are echopraxia and echolalia. Echopraxia and echolalia occur in mental patients who have reached a stage of considerable deterioration or dementia. Frequently the symptoms are found in demented cases of Schizophrenia or, as that disorder used to be called, Dementia Precox — the symptoms, however, are by no means pathognomonic of the disease. Echopraxia is usually demonstrated as follows: You stand in front of the patient facing him as he faces you. Rapidly you raise your right arm; immediately the patient raises his left arm, that is to say, the arm which occupies the position of the mirror-image of yours. Far more rarely does he raise his right arm. The few times that he does, his act comes nearer to imitation than in the former case. Echolalia is a tendency to repeat the spoken word of another person. Again, as a matter of demonstration you face your patient; then, for instance, you say: "I am Dr. X." Immediately the patient repeats your words and says: "I am Dr. X." This would seem like imitation; actually it is not true imitation. For, assuming that your voice is deep and manly and your patient is a relatively young girl with a high-pitched voice, there is no attempt on her part to imitate the deep note of your utterance. If there had been such an attempt her behavior would more nearly approximate imitation than it actually does. What the psychology of these symptoms is, I do not know. The psychiatrist speaks of both as signs of "suggestibility"; that, of course, implies a theory, but since the theories of suggestibility are various it is difficult to judge whether or not the psychiatrist's verdict is adequate.

Whereas, then, there may not obtain truly imitative behavior among living beings, there seem to occur an *induction of conation* in one individual by the behavior of another individual of his species. In the case of human adults, such an induction might be effected by means of the spoken word; but, there is a far more primitive principle by which conation is induced, a principle which applies not only to man but to many of the higher animals — how far down in the scale it applies is impossible to say. The principle is the one of *primitive passive sympathy.* Whenever an instinct is at work, aside from the adaptive locomotion which leads to goal-attainment, there appear certain other observable "behavior" signs of conation. The most important of these signs are facial expressions, vocal intonations and gestures. Since these signs vary with different instincts they are frequently diagnostic of motivation. It has been called to attention earlier that the locomotion *per se,* since it does not sufficiently vary in different instincts, does not as a rule permit the diagnosis of motivation. The expressive signs have been called the *expressions of emotion,* the reason being that common sense recognizes a relation between emotional or affective experience and striving (conation). For instance: whenever a person strives to escape a threatening situation, he experiences the emotion of fear, or whenever he strives to destroy his enemy he experiences the emotion of anger or, again, whenever he attempts to protect his friend, he experiences love or tender emotion. The lay mind also recognizes the expressive signs of affect, knowing that when we are afraid our experience is reflected in our facial expression, in our voice intonation and in certain gestures of fear, or, that when we are angry, our facial expression, our voice intonation and our affective gestures reflect our anger. Thirdly the layman realizes that the affective signs of anger differ from the affective signs of fear. In the same way he is cognizant of the fact that when exercising our protective instinct, our effort is accompanied by expressive signs of tenderness, facial expression as well as gestures and voice intonation. These expressive signs differ from the ones of fear as well as those of anger. Whenever instinctive action has successfully achieved goal attainment the experience of satisfaction ensues. Satisfaction is an affective experience which has its own expressive signs. It might be tender or hateful satisfaction. The facial expressions and voice intonation in the former case will vary from the ones in the latter. The satisfaction of a mother who has just achieved lulling her restless baby to sleep might be expressed in a tender smile accompanied by a mild sigh of relief, whereas, the hateful satisfaction of a person who has succeeded in injuring his enemy might be altogether differently indicated — a triumphant smile followed by a brutal cry of revengeful joy. Whenever a purposive endeavor fails to achieve goal-attainment, the experience of dissatisfaction ensues. Like satisfaction, dissatisfaction is an affective experience having its own expressive signs. Dissatisfaction might be tender like in tender regret or sorrow; it might also be hateful like in chagrin. The facial expressions, the voice intonations, and the gestures of the two are easily distinguishable.

To many biologists and psychologists of the latter half of the past century, the expressive signs of emotion constituted a puzzling problem. Among the English, this was the case with

Spencer[3] and with Darwin[4] each of whom has advanced theories to explain these signs. Spencer and Darwin, alike, attempted to interpret them as atavisms or as stubborn remainders of types of behavior which, on an early stage of human evolution, were actually purposive auxiliaries to adaptation. Thus, for instance, the dilation of the nostrils in anger, was an atavism from the time when men fought with their teeth. Biting their teeth into the body of their enemy they could not breathe through the mouth and so they dilated the nostrils in order to facilitate respiration. When in anger we grin and show our teeth, this is an atavism from the time when we used these in fighting; the exposure of our teeth originally served to frighten the enemy. Whenever, in surprise we widely open both eyes and mouth, this again is an atavism, the opening of the eyes originally purporting to facilitate visual perception, the opening of the mouth to enhance the acuity of hearing — the opening of the mouth achieves this by reducing the disturbing sound of one's own breathing. Wilhelm Wundt, the great German pioneer in experimental psychology, has advanced a rather weird explanation of the expressive signs of affects. These, according to him, reproduce the reflexes which are characteristic of the stimulation of the tongue by sweet, by bitter, and by sour substances; in a less measure they might also reproduce the reflexes elicited through the stimulation by pleasant and by unpleasant odors of the olfactory receptorium in the upper part of the nasal canals. Any one affective experience which symbolically might be called whether sweet, or bitter, or sour, or pleasant, or unpleasant, by sheer association, reproduces the facial contractions that correspond respectively with these reflexes. Emotional gesture, Wundt explains as follows: whenever we speak emotionally to a person, we point at him indicating his existence or "thereness." That tendency persists as affective gesture even when no person is present.[5]

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[3] Herbert Spencer, *Principles of Psychology,* New York: Appleton, 1896, II, pt. IX, ch. V.

[4] Charles Darwin, *The Expressions of the Emotions in Man and Animals,* New York: Appleton, 1898, chs. X & XII.

One suspects that these thinkers of the past, Spencer and Darwin as well as Wundt, were not sufficiently aware of the vital biological role the expressive signs of conation continue to play in the everyday adjustment of man to man and of animal to animal. Though not ignorant of it, they had not a sufficiently weighty conception of the survival value of *primitive passive sympathy.*

The induction of conation or striving through passive sympathy takes the following course. Assume that, in the presence of a person (B), another person (A) becomes stirred into action by an impulse (X), activated by an environmental event that requires adaptive behavior on the part of (A) but not on the part of (B). Assume further that (A), swayed by the impulse (X) displays the expressive signs of that impulse, then, these expressive signs *per se* seem to have the power of evoking in the person (B) the same conation (impulse (X)), as the one which at the time disturbs the person (A). (B), in turn, becoming possessed by the same desire as (A), will now display the expressive signs of the impulse (X). The expressive sign of impulse (X) might now induce the corresponding conation in a third person; the expressive signs displayed by the latter, in a fourth person, and so forth. In this manner, groups of people by displaying the expressive signs of conation might mutually stir one another into impulsive action. Group flight and group pugnacity would be largely accounted for by social contagion through passive sympathy. In order to illustrate its significance I shall submit two observations of my own. Once, as a young post-graduate, I spent a year and a half in Copenhagen as a special student of the late Alfred Lehmann. I had rented a room with a family who had an apartment in a rather desolated section of the outskirts of the city. One evening late at night, on returning home through the nearly abandoned street, I saw approaching me a young boy of the age of about twelve. It was a dark and stormy night, the bright moon being one moment covered the other uncovered by dark rapidly moving clouds. As the boy came nearer me, he suddenly stopped. For some reason, the presence of my tall stooping figure seemed to evoke in him a terrific fright. He cried out a cry of terror, turned around and ran away as fast as his legs could carry him. Though knowing myself in complete safety, his cry provoked in me a profound apprehension; it prompted me to hasten my steps towards my home and it did not abate until I found myself in my room, the door locked behind me. Several years before this occasion, I lived in Paris as an art student. I occupied a studio on the top floor of a building in a section of Paris near the southern walls inhabited mostly by laborers. One morning, walking to my art school, I noticed a husky man maltreating cruelly a little dog. The French of the lower classes, like so many other Mediterranean races, have little feeling for the suffering of their animals. Here, however, was an act of cruelty of such a severity as to provoke angry resentment on the part of the people in the street. Men and women gathered around the culprit threatening him with an angry vocal reprimand and even with fist-shaking. The group increased. I observed that people turning in from side streets, noticing the commotion, seemed to be themselves excited. They ran to the place, joining in with the general tenor of the emotion. These late-comers could not possibly have been aware of the original cause of the group-rage. They were evidently stirred to anger by the expressive signs of rage diplayed by the original participants in the tense situation. The whole affair — ridiculous to say — resulted in a pandemonium of indiscriminate group-fighting which was finally brought to an end through the interference of the police.

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[5] Wilhelm Wundt, *Grundzüge der Physiologischen Psychologie,* Leipzig: Engelmann, 1911, III, pp. 264-266.

Passive sympathy is not reducible to imitation, for each member of a group as far as overt locomotion is concerned may behave very differently from the rest. Since the biological role of passive sympathy is evident, it would seem to be a deep-rooted tendency which like the instinctive dispositions would seem to have developed in the course of evolution and persisted because of its survival value. It might perhaps be called an instinctive tendency but not *an instinct;* it is too generally associated with all the instincts to warrant the latter denotation. It seems to depend upon a number of inborn organizations, indeed, as many as there are instincts. Each organization consists in a tie between expressive sign and respective instinct. The expressive sign, as an environmental event, activates the instinct; the latter having been activated, the sign is perceived as the corresponding expressive sign. Passive sympathy — as we shall soon see — plays an important role in the education of the human child especially during infancy.

The great biological and social import of primitive passive sympathy warrants the quotation of the thinker who has most emphatically called to attention that import, William McDougall. Illustrating the phenomenon largely by examples from the animal kingdom, he writes: "In connection with the gregarious instinct, we should notice a fact of primary importance for all social psychology; namely, among the gregarious animals, where concerted action or, rather, community of behavior, is necessary for securing the full benefits of group-life, each of several of the instincts seems to be specially adapted on the receptive side, in such a way as to be played upon by the expressions of the same instinct in other members of the species. We see this clearly in the familiar response of dogs to the specific cries of other dogs. The yap which the dog utters, when he starts a rabbit or other prey, was designed by Nature to bring his fellows to his aid; it is one of the keys of the hunting instinct. But the key would be useless without a lock into which it may fit; and this lock is to be found in the perceptual organization of the same instinct of every member of the species. Hence, when this yap resounds, it fits into all such locks and arouses the impulse of pursuit in all dogs within hearing. The same seems to be true of the bark of anger; it brings to the scene of combat all dogs within hearing, all tensely prepared to take part in the struggle. Perhaps the most generally manifested response of this sort is the behavior evoked by the cry of fear; for among the more timid animals a cry is in nearly all cases the first expression of fear. The cry of fear and other expressions of fear, such as headlong flight, are specific excitants of fear itself. The instinct of curiosity and seemingly in many species (especially among gregarious birds) the pairing instinct are adapted in a similar way; each has a lock which is adjusted to the key formed by the expression of the same instinct. This liability or capacity, so widespread among gregarious animals, the liability to be stirred to that kind of instinctive behavior whose signs are displayed by other members of the species, I have proposed to call *primitive passive sympathy.* For subjectively it involves the sharing of the emotional excitements that accompany instinctive behavior. It seems to be very general in the human species; that is to say, most of the human instincts have this lock or specific adjustment on the receptive side. It is the source of many of the phenomena of crowd-behavior, such as the panic, the frenzied applause and frenzied anger of the mob. And it is the essential basis of the higher forms of sympathy. If the gregarious instinct is the cement without which the group could not come into existence or grow beyond the very simple form of the family, it is primitive sympathy that renders group-life advantageous to all members of the group and is the basis of all higher developments of sociability."[6]

Systematic psychology indispensably requires some form of energy-hypothesis. The concept of energy, everywhere in science, is an abstraction based upon the observation of force or power of effect; thus it is always hypothetical. The mental energy that psychology would have to postulate would possess the following power of effect. It would be able to mobilize the potential physical energies of the body distributing these into such patterns of forces as to result in locomotion adequate to the pursuit of a goal. The energy-hypothesis being indispensable, it becomes logical to consider the instinctive dispositions, the seats or sources of mental energy. Whenever, then, an instinct is activated, a physical event releases mental energy; the latter, in turn, acts back upon the physical organism in the manner described above. Such is the gist of that principle of psychophysical interaction which Sherrington considered theoretically impossible and, nevertheless, a matter of fact. *We* are satisfied to admit psychophysical interaction a profound riddle. If one chooses to call the instinct a psychophysical disposition such a description of the instinct implies the same evasion of the fundamental mind-body problem as is implied in the medical term "psychosomatic" or in the term coined by a leading American psychiatrist "psychobiological." In contrast, we emphasize that the instinct is a *mental* disposition and the seat of *mental* energy.

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[6] William McDougall, *Outline of Psychology,* pp. 155-157.

Albeit, the nature of psychophysical interaction being as yet unknown, we have to accept it and use it in our thinking; we have to proceed somewhat like the mathematician who develops mathematical thought-sequences containing one or more unknown factors, the (X), the (Y), and the (Z) of mathematics. Allowing into mathematical thought-events unknown factors, the mathematician might finally succeed in identifying these. The psychologist might hope for the same in regard to his own (X)s and (Y)s. Whoever refuses to vision a riddle could hardly hope to solve it. Far too much of contemporary scientific psychology turns away from the empirical though theoretically enigmatic fact of psychophysical interaction.

McDougall considers the instincts sources of energy and fundamentally the very springs of action. Whether or not we would have to regard the energies of the different instincts differently qualified — like in physics where we recognize, for instance, thermic, electromagnetic, kinetic energy, and so forth — is an academic question. If we do we would have to assume also that the mental energies can be transformed into one another. As long as the basic nature of psychophysical interaction remains an (X), reflections of this type, however, are of little significance even in systematic thought.

It has been remarked that — from the standpoint of conational psychology — the raw material out of which grows the psychological self or conative mind is not the reflexes of the body but, rather, the purposive dispositions of mind that we call the instinct. We have seen that, as soon as we apply to psychological events the energy concept the instincts logically become the seats or sources of energy. This in turn means, that whatever changes our basic conative dispositions undergo, whatever new tendencies we might acquire, the instincts remain the fundamental energizers of all adult conduct, including the conduct prompted by intention or will in the very highest sense of these words.

The problem before us is to describe in generic terms the ontogenetic development of the psychological self or conative mind. Such a development incorporates, on the one hand, the acquisition of new cognitive-conative dispositions and, on the other hand, the integration of all purposive dispositions, innate as well as acquired, into a hierarchy of relative dominance. All acquired purposive dispositions should be denoted as *sentiments.* The term sentiment would then distinguish the acquired from the inborn purposive dispositions, notably from the *instinct.* Here, we follow entirely McDougall's suggestion, which is wise and precise. We shall follow it even more ruthlessly than did McDougall himself. For instance, any acquired food-preference I shall unhesitatingly denote as a food-sentiment. McDougall used to resent that my proposal. The term sentiment had to him a certain dignity which — though it is strictly in accord with his own definition of sentiment — made him unwilling to apply the term to such a low-bred species as an acquired food-preference.

The development of the adult psychological self or the adult character seems to proceed on three successive levels. These I have indicated in the attached diagram (Fig. 5). I have called these levels respectively: (1) the level of *cognitive accumulation,* (2) the level of *conative complication* and (3) the level of *sublimation-integration.* My diagram epitomizes another feature of significance. The horizontal line, below the short lines that indicate the levels, is divided at a certain point corresponding with the end-point of the level of cognitive accumulation or the starting-point of the level of conative complication. To the left of that division, we have manifestations of development that can be observed on the animal as well as on the human level; whereas, to the right of the division, we have types of development which are exclusively human. Some of us — as we shall see — might feel that conative complication is to be found in those of the higher animals which we keep as pets or as otherwise domesticated members of our households and whom, accordingly, we consider as nearly of man's kind. Be that as it may, there can be no question that the highest level of development, sublimation-integration is exclusively human.

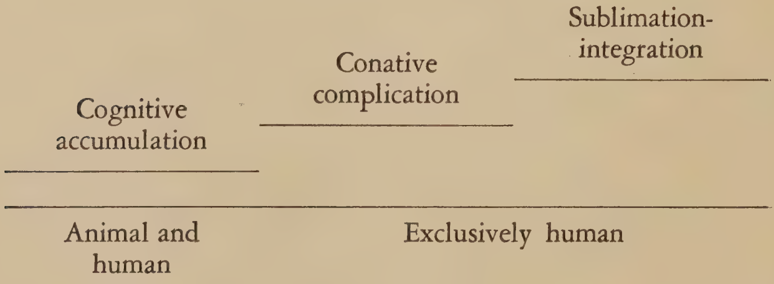

Fig. 5

Cognitive accumulation refers to the fact that, objects and situations which in virtue of inborn organization did not activate an instinct, might as the result of experience, come to do so. Conative complication refers to the fact that in one and the same acquired sentiment might enter several instinctive tendencies, these instincts having become amalgamated into a unit by experience. Sublimation-integration refers to the development of moral sentiments and the integration of these under dominating master-sentiments or *ideals.* If we choose to regard the developments on all the three levels a matter of learning, we might. Since, however, learning is mostly considered the improvement of performance by frequent repetition I would not, in the light of some of the developments to be examined, universally endorse that viewpoint. Some of these developments, to wit, seem to result from one single crucial experience. In describing the three levels of development of character — incidentally McDougall does not keep these strictly distinct — I shall closely follow his exposition in regard to the first two levels; the instances from animal life exemplifying the first level will be quoted from his writing. The general formulations and the examples from human life will be my own. In regard to the third level of development, sublimation-integration, I shall add to McDougall's doctrine a number of original considerations.

The first level of the development of character, cognitive accumulation, involves several principles. This makes it convenient to add to our first diagram a second one which refers solely to that level (Fig. 6).

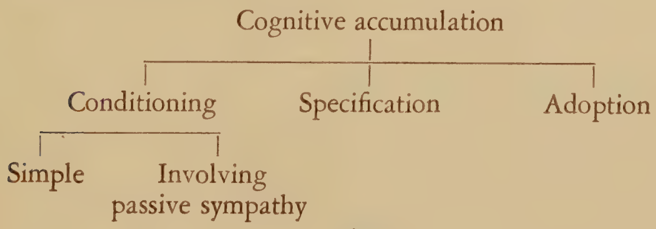

Fig. 6

As indicated by the diagram the process of cognitive accumulation involves three distinct principles: (1) the principle of conditioning: conditioning might be of one or the other of two kinds, (a) simple conditioning, and (b) conditioning involving passive sympathy; (2) the principle of specification, and (3) the principle of adoption.

The general formula of simple conditioning is as follows: two physical events (A) and (N) coincide. Of these (A) the *adequate event* is of such kind as to activate by inborn organization an instinct (X); (N), the *non-adequate event* activates no instinct. The very coincidence of an adequate and a non-adequate event might result in the latter, on later occasions when it occurs alone, activating the instinct (X). (N), the originally non-adequate event, is then said to have been conditioned to evoke the impulse (X). Sometimes repeated coincidences of (A) and (N) are necessary in order to effect conditioning, but this need not be true; one single instance of coincidence of (A) and (N) accompanied by intensive instinctive adjustment to (A) might suffice to condition (N) in all future to activate (X). An instance of simple conditioning would be the dog who comes to fear the snap of the whip. Underlying this conditioning are simultaneous occurrences of an (A) and of an (N), (A) being the impingement upon the dog's body by the whip-cord, (N) the sound waves produced by the whip. The former, by inborn organization provokes the escape tendency becoming known — as soon as the instinct is activated — as bodily pain; the latter, originally, does not by itself activate any instinct. By conditioning, however, the mere snapping of the whip might become the evocative of escape conduct. There is a proverb regarding human children which expresses simple conditioning: the burnt child fears the flame. No explanatory comments are required.

The difference between simple conditioning and conditioning involving passive sympathy is simply that in the latter case the adequate object (A) is one or the other or all of the expressive signs of an instinct (facial expression, voice intonation, or affective gesture). Coinciding with (A) occurs some other originally neutral event (N). Here, by inborn organization, the expressive signs activate the instinct (X). (N) by its coincidence with (A) will become conditioned to evoke (X). McDougall quotes from the diary of a traveler a typical example of this type of conditioning. The instance was observed by the late Benjamin Kidd and described in his *Science of Power.*

"I came upon a nest of wild ducks in a marsh as the young birds had just emerged from the eggs. The mother duck flew off and disappeared in the sedge . . . I stood by the nest for some hours and watched the young birds. The greatest number were already active and displaying an interest in their surroundings. They began to try and get out of the nest, and I took them one by one in my hand and placed them in the water. They showed not the slightest fear of me, nestling from time to time on my feet . . . After a time I moved away some distance to watch what would happen. The mother bird returned and alighted near by. The little ducks rushed towards her as she called. I could observe her. She was chattering with emotion. Every feather was quivering with excitement. The great terror of man was upon her. After a short interval I advanced towards the group again. The mother bird flew away with a series of loud warning quacks. The little ones scattered to cover, flapping their short wing stumps and cheeping with beaks wide open in terror. With difficulty I found one of them again in hiding. It was now a wild, transformed creature, trembling in panic which could not be subdued."[7]

McDougall commenting upon the episode writes: ". . . what has happened within the duckling? As Kidd says, the duckling, after the infection by fear in the presence of man, is 'a transformed creature.' In what does this transformation consist? . . . We saw that the young ducks, having on a single occasion been excited to fear (by way of primitive passive sympathy) in the presence of man, thereafter show fear of man; they have acquired the 'fear of man.' Or, in other words, the fear propensity [instinct], which, before the incident, was not excited by the presence of man, after the incident is liable to excitement on perception [should read *by the presence*] of man. In the duckling the induction of fear (by way of primitive sympathy) in the presence of man 'conditions' the fear propensity to man . . .."[8]

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[7] William McDougall, *The Energies of Men,* pp. 196-197.

In order to illustrate the general fact that the fears of a species are not necessarily inborn, *i.e.,* instinctive, but, rather, acquired, I wish to relate an observation of my own of animal behavior. The episode dates back to the time when I spent spring and summer on the little island in the Baltic Bay. I have earlier reported some observation of the conduct of young seagulls made in the same locality. My present observation concerns the species dog. My fishermen hosts had a female dachshund. Some time ago she had come down with a litter of young. Only one of the young was allowed to live; we called him Peter. Peter flourished; the event to be described took place when he was about two months old and had not as yet acquired his "sea-legs." One day — neither Peter nor his mother were at the time present — we killed a large snake which we deposited on a flat rock on the lawn in front of the log cabin which I inhabited. Some time later, Peter's mother came along. Seeing the dead snake she displayed the greatest excitement, barking violently, sometimes approaching it as if to attack and then again withdrawing in apparent fear. This performance continued for quite a long time. Notice, that Peter was not present at all. At last the mother dachshund seemed to tire and went off "fishing." She liked to go down to the boat house where the waters were shallow, wade out a short distance and snap for little fishes which swarmed all about. Like in the case of most sport-fishing, when one is out to make individual catches, she was rarely successful, and, in view of her meagre harvest per time-unit, one might well say that she was wasting her time. But, this is another story. Let us return to the scene of the more significant events. Little Peter appeared out of somewhere and approached the flat rock on which lay the dead snake. He seemed to experience no fear whatsoever — he did not even bark. On the contrary, he looked at the snake; then calmly and composedly, he gripped it at the middle of its body and dragged it along to the veranda where I was reposing, depositing it at my feet. First then, did he utter a yap, looking up at my face as if asking for approval. The whole event was really comical; its significance, however, is that little Peter had not as yet acquired the fear of snakes, a fear that was so evident in his mother. The mother's contraction of fear of snakes might have been due to simple conditioning or to conditioning involving passive sympathy.

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[8] *Ibid.,* pp. 197 and 199-200.

It is a current observation that little children are likely to refuse eating certain foods that are healthy, even necessary, to them. For instance, many children will reject spinach. A wise mother knows how to remedy such a perverse food-repulsion. She takes, herself, a spoon of spinach, puts in in her mouth and while chewing and swallowing simulates the facial expression of profound delight and satisfaction. She might add to her little drama expressive vocal signs of enjoyment. By such a procedure, she might induce the child to eat the previously obnoxious spinach; the event is one of the conditioning of the child's food-seeking impulse by the intervention or intermediary of passive sympathy. The adequate object (A), provoking in the child food-hunger (the (X) impulse), is the mother's expressive signs of satisfied hunger, the inadequate object (N), the spinach. The former (A), by passive sympathy, evokes the food-impulse (X) of the child, whereas the simultaneous presence of (A) and (N) effects the conditioning by which later the child, presented exclusively with (N), the spinach, will act with food-behavior, or (X) impulse, toward it.

The second principle of cognitive accumulation, specification, is likely to manifest itself in cases where by inborn organization an instinct is not highly specified as to the physical object or event that provokes it. Instances, in that sense, of a low degree of specification would be found in the food-seeking instinct of the human child, the instinct which as we have observed functions nearly indiscriminatively, or the instinct of self-submission which is called into activity by a large number of modes of dominating conduct displayed by a large number of fellow-members of one's species. The general situation likely to resolve itself in specification would be: an instinct (X) by inborn organization is activated by several objects or events — one might say of a class; these may be called respectively (a^1), (a^2), (a^3), (a^4), (a^5), and so forth. Specification would consist in all of these except one, viz., (a^1), (a^2), (a^4), (a^5), etc., in a measure losing their power as evocatives of the instinct (X), while the excepted one (a^3) alone retains that power. The loss on the part of (a^1), (a^2), (a^4), (a^5), etc., is as a rule only a relative not a complete loss. These objects or events might still provoke the instinct but far less markedly than before the specification. McDougall offers the following illustration of specification on the animal level. "A sheep has a propensity to feed and shelter the lamb; and this may be evoked by any young lamb that approaches her at the appropriate time, commonly by the lamb to which she has given birth. But after she has fed and sheltered the one lamb for some little time, her maternal propensity becomes specially directed upon this one lamb; she repudiates other lambs that may approach her and seek her udders. The mother-sheep's behavior towards her lamb becomes, then, something other than the simple working of instinct or innate propensity; in so far as the propensity becomes specially directed upon the one lamb, we have to do, not with a pure unmodified maternal instinct, but rather with a very simple rudimentary maternal *sentiment.* In repulsing other lambs and welcoming her own, the sheep virtually says: 'This is my own little lamb; he is more to me than all other lambs.' "[9]

McDougall compares the specification of the maternal instinct in the sheep with the corresponding specification in the human mother. "This process of specialized direction of maternal propensity upon some one object out of a whole class of similar objects is carried much farther in the human mother. In her also the maternal sentiment in its simplest form is merely a concentration of the protective or maternal propensity upon a particular infant. Such a very simple sentiment, regarded as a unit of structure, closely resembles an instinct, but differs from it in two respects: first, whereas the instinct responds to all objects of a given class, the sentiment responds to one particular object only (or some restricted group within the larger class); secondly, this specialized direction of the propensity is acquired through individual experience . . . The mother who is devotedly attached to her own infant is not necessarily incapacitated for maternal response to other infants; yet in various degrees this does occur; and the woman of strong maternal propensity is more likely to engage herself in wide philanthropic activities, if she has no children of her own who will specialize the propensity in sentiments of love for them."[10]

In the human being any development of a food-preference (food-sentiment) would illustrate the principle of specification. In that instance the genesis of the sentiment would be quite an "Odyssey"; for, the food-seeking instinct of the little child is evoked by a class of objects that have little more in common than the size which makes it possible for the child to insert the object in his mouth and to swallow it. In this class belong many objects which are distinctly harmful to the child, viz., the bolt and the spike of earlier mention. These harmful class objects have first to be eliminated; perhaps, that could be considered a matter of primary specification. Then, among healthy food-substances, some are rejected by the child, viz., spinach. Such a rejection might become remedied through conditioning involving passive sympathy. Finally, among the total number of the adequate food-objects, the child might single out *one* as the preferred one, developing for it, particularly, a definite food-sentiment; the last link in this long chain of developmental events would again instance the process of specification.

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[9] William McDougall, *The Energies of Men,* pp. 205-206.
[10] *Ibid.,* pp. 206-207.

Some instincts, perhaps all, are connected with what we might call *appetite.* This is particularly evident with all the instincts which show a temporal periodicity in function. The food-seeking instinct of most living beings shows such a periodicity. There are times of satiation of food-hunger when the instinct cannot be evoked; there are other times when the appetite is strong and when the impulse is especially easily evoked. In many species, the same is true with the sex-instinct. There are many animals who mate only during certain seasons of the year. Nest-building, in some species, shows the seasonal variation of appetite. In many species, the protective instinct has probably periods of high and of low appetite. The appetite, in most instances, is probably a physiological state which is, in itself, an evocator of the instinct. Activation of the instinct by sheer appetite, however, leads only to restless random search for the adequate object: food, the mate of the opposite sex, building material, the young to shelter, and so forth. Only the appearance of these objects in the environment gives direction to the respective types of instinctive behavior. Instincts associated with appetite, then, can be said to require two activating events in order to effect adaptive behavior, on the one hand the organic condition, or appetite proper, on the other hand the appearance of the object proper. It sometimes happens that an appetite might be strong at a time when the proper goal-object is not within reach. In such a situation, sometimes, the third type of cognitive accumulation might be observed, the type we have called adoption. Deprived of the adequate object of the instinct, that is to say, the object which, by inborn organization would serve the satisfaction of the instinctive need, the animal might choose a substitute object; the latter is different from the natural object but not too remotely different. McDougall illustrates adoption by an example from animal life. In order to emphasize the setting of adoption, he compares his case with another that might be called a case of pseudo-adoption; the latter actually is not a case of adoption at all but, rather, one of outright simple conditioning.

"If to a litter of kittens, kittens of about the same age from another litter be added, the mother-cat will treat them as she treats her own: she simply does not discriminate. If young puppies be placed among her litter, she may, or may not, 'adopt' them. If she adopts them, what happens within her? At first she shows, perhaps, indifference or even some hostility or aversion; but after a little while, she allows them to suck and extends her maternal solicitude to them. This may be regarded as a typical case of 'conditioning.' The maternal propensity is evoked by her own offspring in the presence of the strangers; and, in consequence, becomes 'conditioned' to, or habitually responsive to, them also. But now suppose that, instead of adding puppies to her own litter, you first take away the litter. She shows some disturbance; perhaps goes about vaguely seeking her young. You then place in her nest-box, whence her litter has been removed, two or three young puppies. At first, perhaps, she does not treat them maternally; but after a little while she settles down, suckles them, and shows protective solicitude towards them, perhaps 'adopts' them 'wholeheartedly.' In this case we seem to see at work a third principle, namely, *an object resembling in certain respects the instinctive or natively given object of the propensity may, under favorable conditions, evoke that propensity and become its habitual object.*[1]

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[11] *Ibid.*, pp. 210-211

Among human beings the instances of adoption are numerous. The nearest parallel to the animal case would be the childless human parents who, prompted by a strong protective appetite, adopt the child of somebody else. I have always thought of the so-called "crushes," which appear between boy and boy or between girl and girl in those schools where the two sexes are not admitted together, as instances of adoption. In these young people the sex-appetite is on the verge of awakening and an object is sought; in the absence of the adequate object which would be a young person of the opposite sex, an inadequate object, *i.e.,* a person of the same sex, becomes the focus of the dimly realized sex tendency. These crushes are practically always corrected when the sexes are brought together. Though a crush, at the moment of separation of the younger participant from the older—the older one finishing school and leaving—might be extremely painful to the former, the broken attachment as a rule leaves no enduring scar that intervenes with later normal adjustments. The temporary homosexual behavior among sailors on long cruises or among prisoners deprived of relations with the opposite sex are probably also instances of adoption. They, like the crushes, are corrected as soon as normal intersexual relation is permitted.

The second level in the development of character, I called the level of conative complication. In case, one and the same object (A) repeatedly evokes two or more instinctive impulses (X), (Y), and (Z) etc., whether these are aroused simultaneously or on respective successive occasions, a sentiment might be formed in which is contained all these instincts. Such a sentiment is a unit and it is activated as a unit. Even though when activated, one type of impulsive behavior might prevail, that behavior is sustained and reinforced by the energies of all the instincts incorporated in the sentiment. A simple instance of conative complication would be the sentiment of hatred. Your enemy has repeatedly inflicted upon you injury — physical or mental;

this has provoked your tendency of escape; he has also repeatedly frustrated your ambitions provoking your pugnacious tendency. As a result, you develop hatred toward him; in your hatred is incorporated two instincts, the one of escape and the one of pugnacity. Whenever you plan to destroy your enemy, your cognitive act is energized both by the instinct of escape and by the pugnacity instinct. Another instance of conative complication is proffered by the sentiment of friendship. In this sentiment enters at least three instincts. One is the gregarious instinct; you like to be with your friend, you prefer his company to the company of other people. Another is the protective instinct; you wish the welfare of your friend and, in all positive ways within your power, you actually try to protect him. Thirdly, there enters into the sentiment of friendship the self-submissive instinct; you respect your friend. This means that you are likely to submit to his opinions and wishes more, perhaps, than to the opinions and wishes of other people. If a sentiment of friendship exists between two young persons of the opposite sex, the sentiment may develop into one of *tender passion.* In that sentiment is incorporated, in addition to the instincts mentioned, at least one more, the sex instinct. The variety of conatively complicated sentiments, of course, is very great. I have suggested that the developments on the level of conative complication can be observed only among human beings. Some of us, however, feel that complicated sentiments might be acquired by our domesticated animals, those whom we consider nearly human. A dog would seem to develop friendship for a good master. He displays unequivocal delight at his company; he submits to his call or to his otherwise expressed demand. He might protect him when he is attacked, and so forth. On the other hand, a horse, whom his master frequently whips and whose food-seeking impulse he continually frustrates by starvation diet, might perhaps develop toward him the analogy of a sentiment of hatred expressed in ever ready attempts to throw him. Such interpretations of the attitudes of the domesticated animals would seem reasonable enough. It is more doubtful whether in the wild state sentiments ever develop between animal and animal.

The third developmental level in the formation of character, I called the level of sublimation-integration. Unquestionably that level is exclusively human; the reasons for this will become evident shortly. By definition, sublimation refers to a raising of the level upon which the primitive instincts expand their energies; the term raising is to be taken as a raising in the *social, ethical* or *aesthetic* sense. I believe, we should keep separate two modes of sublimation: the one would consist merely in a refinement of the forms under which the instincts seek satisfaction of their still primordial needs — we might perhaps call that type a sublimation of means; the other would consist in the elevation of the goals themselves, a true sublimation of ends. The distinction between the two will become clear through the examples.

When we eat our food, we use table manners; this would be an aesthetic sublimation of the simpler kind. We do not, as did our ancestors, grab a morsel of steak with our bare hands, tear it to pieces with our bare teeth, saliva and meat juice dripping down our cheeks and neck. Instead we use special instruments to carve up our food and other instruments to convey it to our lips. Speaking of food-behavior, the adherence to definite meal hours is a sublimation of "means"; it is a sublimation of considerable social-economic significance. For, if everybody requested food the very moment he began to feel the hunger-pangs, there would not be a sufficient number of chefs to go round. The sex-behavior of civilized man presents many varieties of sublimation of form. The sex act is not sheer brutal coition — perhaps rape; it is anteceded by ceremonial courtship which frequently takes very aesthetic forms. Then, there is the social ritual of the marriage ceremony which is also a sublimation of form. The kiss by some writers has been considered a refined remainder of the animal love-bite. Courting behavior is observed among many animals, particularly among several species of birds. While to the human observer much animal courting seems to possess beauty, it is doubtful whether to the animal itself it serves any other purpose than the production of penial erection or vaginal "heat." Sublimation of means might be prophylactic. The tendency of escape or fear might become sublimated into a general attitude of caution or precaution which continually serves the avoidance of danger situations. In Shakespeare's character, Polonius, caution has been developed into the extreme and impresses one as the caricature of a human tendency.

While the gregarious instinct is responsible for the adhesion of the primitive group and the instinct-pair, self assertion-self submission, for its simple organization, the preservation of a culture group depends upon the moral sentiments of its members. The moral sentiments are altruistic; they prompt the individual to recognize the group as a value higher than the self, a value that, in case needed, must be protected even at the expense of the self. On the other hand, they prompt the recognition that the enduring welfare of all individuals depends upon the group and upon the group-ideals which offer the individuals "freedom under the law." The moral ideals constitute our cultural, the instincts our biological inheritance. The cultural ideals are transmitted from generation to generation, this transmission being a matter of the moral education of the new by the older generation. The moral ideals might partly differ in different culture groups; for instance, among the Japanese, suicide after failure of achievement is considered a virtue, an important item in the code of honor of a man. The act of suicide has even its prescribed ceremony or ritual which might be regarded as a sublimation of the form or means of self-destruction. The "Herrenrasse" ideal is contrary to the ideal of Christian thought: universal equality and brotherhood before God. Despite differences of ideals in different culture groups, the moral ideals are cultural traditions of respective groups; they have evolved during centuries, perhaps millenia, and have been sustained by transmission from father to son. With political revolutions sometimes follow moral revolutions: re-shufflings of the units on the older scale of values. Since the inertia of cultural tradition is very strong, moral revolutions may not have survival value; they may fail to get the sufficient grip upon the masses to be sustained; instead, they might be succeeded by reactionary counter-revolution.

The development of the moral sentiments instances the elevation of goals or ends by sublimation. Such an elevation of goals is always conditioned by a certain measure of inhibition of the crude egotistic modes of conation. This points to the indispensable assumption of some sublimating agency effecting at the same time the inhibition of the crude tendencies and the re-direction of these towards the higher social goals. What is the sublimating impulse? Long ago, I suggested that the sublimating impulse or agency is always a derivative of the protective instinct; this is for the very simple reason that the protective is the only truly altruistic of all the instincts. The situation in any case of sublimation can be made clear by the diagram below which utilizes as the homologue of the act of sublimation, the parallelogram of forces.

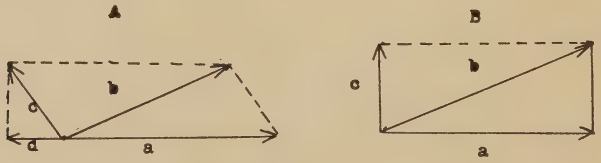

Fig. 7

Let us first consider only diagram (A). Here, arrow (a) is intended to symbolize the crude egotistic expression of an instinct, arrow (b) the sublimated tendency of the same instinct toward a socially elevated goal and arrow (c) the sublimating impulse which we hold is always a derivative of the protective instinct. That latter arrow has a projection on the horizontal line, arrow (d), a projection which stands for a force diametrically opposed to the force denoted by arrow (a); force (d) thus conflicts with force (a), and effects a relative inhibition of the latter, the total effect being the elevation of the goal of the primitive instinct. It should be heeded that the use of the diagrams serves only the purpose of clarification and should not be considered of any import beyond that. To give concreteness to our abstraction, let us consider (a) primitive pugnacity and (b) moral indignation, the sentiment that prompted Christ to drive the merchants from the temple. The genesis of the moral sentiment, here as always involves the intervention of the protective impulse. Our diagram implies that any act of sublimation is anteceded by conflict between a crude egotistic and an elevated altruistic tendency. This is probably true at the early stages of moral education, in early and late infancy. However, as soon as moral sentiments have reached a certain strength the conflict abates or at least loses explicit recognition. A strong moral sentiment, in all situations involving alternatives of action, immediately seems to resolve all conflict. In the life of the moral adult, this would seem to be the rule. For instance, suppose a person comes to me telling me that he has designed the perfect method of robbing the bank in (X)-ville; in fact his method is so cleverly planned that the robbery could not possibly fail. But, he needs an assistant and he asks me to come with him, promising me that we are going fifty-fifty on the booty. I immediately refuse, my moral sentiments not allowing me even to consider his proposition seriously. Like most other people I should not mind attaining wealth; nevertheless, due to the strength of my reaction to the moral issue involved I feel no conflict whatsoever between selfish acquisitiveness and the pursuit of a higher exemplar. My case is the current one among adults of developed morality. There are, however, situations even in adult life when the very best of men might suffer conflict before achieving sublimation. According to the Bible story, even the King of Kings suffered such a conflict: Christ on Mount Olivet when he prayed to God to be relieved of his tortuous mission of redeeming mankind. The agony of his conflict, we are told, was so severe as to make him perspire blood. The situation of sublimation without conflict might perhaps be illustrated by diagram (B) in Fig. 7. Here the arrow (c) being vertical to (a) presents no projected component which conflicts with (a). Again the diagram serves merely as a metaphor to aid understanding.

The moral sentiments are bi-polar. If we permit the terms "love" and "hatred" to denote opposite conative attitudes towards virtues and vices, respectively, we might say that the love of a virtue (A) incorporates the hatred of its opposite, (A) inverted, (∀), or, if you prefer, the love of (A+) incorporates the hatred of (A—). To speak in concrete terms, the love of honesty, for instance, is associated with the hatred of dishonesty, and the love of justice with the hatred of injustice, and so forth.

The development of the moral sentiments has been described as a sublimation of goals or ends to be distinguished from the more primitive sublimation that results merely in the refinement of the means of obtaining the as yet primordial ends. It is possible, even likely that the latter sublimation, the sublimation of means, is conditioned by a rudimentary development of moral or social sentiments; if this be the case, even the sublimation of form or means would be effected through the interference of the protective instinct. We mentioned as one example of sublimation of means the adherence in our food-seeking behavior to definite meal-hours pointing out the social-economic value of that self-imposed restriction. In case all sublimation of form or means is accessory to sublimation of goals and to social rather than to selfish considerations, then, we might make a sweeping generalization to the effect that in all forms of sublimation the protective instinct or a derivative of it is always ultimately the sublimating agent. Moral development in the sense of simple socialization begins in early childhood, in a more complex sense it continues until the very climax of man-or womanhood. The very simplest sublimations of means involved in what might be called the "housebreaking of the little child" would be in broad principle of the same nature as the sublimations of adulthood, all sublimation being effected by the intervention of the protective instinct. If this generalization is valid, it has two important implications, one a positive and one a negative one: (1) in moral education, appeal must be made to the protective impulse of the subject, and (2) the traditional educational method through reward and punishment is inadequate. With humble hesitation I shall begin by considering the latter implication.

The faith of men in reward and punishment as the means of moral education would seem nearly archetypal. In modern times it has had its scholarly defenders ever since the time of the great enlightenment in the eighteenth century. Proverbs have advertised it, proverbs such as: spare the rod and spoil the child. Innumerable educational books and stories have been written both for adults and children dealing with the ever pregnant topic: virtue rewarded, vice punished. Fairy tales about the good little princess and her cruel stepmother and stepsisters who treat her badly and finally meet disaster, while she gets the prince and lives happily ever after, are variations of the theme: virtue rewarded, vice punished (the Cinderella theme). Could all this syndicated doctrine be wrong? I venture to suggest that it might. My reasons, I believe, are correct both logically and psychologically. Whenever by threatening punishment you attempt to correct a crude egotistic impulse of a child or young person, you appeal to *one* egotistic tendency, notably, the impulse of escape or fear, in order to correct *another* whatever the latter may be; in the same way, whenever you promise reward in order to correct an egotistic impulse you appeal again to *one* egotistic impulse — let us call it a derivative of the acquisitive impulse — in order to correct *another* egotistic tendency. As a matter of sheer logic in either case, you would lose in one direction what you gain in the other; that is to say, while weakening some egotistic tendencies you strengthen others. This would be true on the whole front of possible appeals, with the exception of one only, notably, the appeal to the only genuinely altruistic of all the instincts, the protective instinct. My suggestion, least said, is adequate logically — some educators to-day begin to feel that it is also valid psychologically. In moral education, the only appeal through which you do not lose in one way what you have gained in the other remains the appeal to the protective tendency.

Assuming that social-moral education in its very simplest form begins in early infancy continuing through late infancy, adolescence and youth, perhaps even far into adulthood; assuming also that all moral education continually progresses by appeal to the protective impulse, the question arises, how is that appeal effected? This is hardly a problem when we consider the age when a young person understands language. Language might stand for or symbolize objects or situations which, if present, would evoke any one instinct or sentiment. In so far as that is true language itself might evoke these impulses. A simple example would be when an articulated cry of distress such as "Help! I am drowning," evokes the protective instinct in a listener. An educator can formulate into sentences the codes of virtue and vice of the culture group; he can explain in spoken words and illustrate by related examples the beneficial effects of individual virtue upon society and particularly the disastrous effects that vice might bring upon others and upon the group. Especially through the latter procedure, he might evoke in his disciple the protective impulse; this impulse will promote acts of sublimation on the part of the pupil and so further the formation of his individual moral sentiments. There is one characteristic of civilized language which is of special importance for moral education. A very young person will be unable to think of virtue and vice except in connection with definite virtuous or vicious acts. The fact, however, that language has collective or generic terms for virtues and vices, such terms as: honesty, dishonesty, justice, injustice, and so forth, gradually makes it possible for him to think of virtue and vice in abstraction from any specific acts. This introduces an economy in thinking which greatly furthers the apprehension of morality and immorality.

Before the little child knows language, how can appeal be made to his protective instinct? The early socialization of the child, of course, begins long before the child understands the spoken word. The answer is: *through primitive passive sympathy.* It has been related how a wise mother by utilizing the child's tendency of passive sympathy can build up proper food-seeking behavior toward foods that the child tends to reject. In a similar manner the mother can provoke in the child a variety of proper conative attitudes toward many objects and situations; including protective attitudes. Let us consider a nearly proverbial example. A little child, playing around stumbles over his toy chair. He begins to scream — in anger more than in pain — and to kick the chair violently. The mother might walk up to the chair, pat it tenderly, perhaps blow lightly at the part of the chair that the child has kicked, simulating, at the same time, the facial expression of pity or sympathetic pain. She might also utter some diffuse moaning sounds of pity. All these expressive signs of protectiveness will be likely to evoke by primitive passive sympathy the protective impulse of the child; the child then might cease to cry, might instead himself approach the chair and pat it, displaying definitely that a protective attitude toward the chair has taken the place of the earlier destructive attitude. In analogous ways other effects of socialization of the child might be brought about. Since the child considers all these things including the inanimate ones as animate, that is to say, as of his own nature, the protective attitudes built up are subjectively social; they smoothly merge with the objectively social attitudes towards the real living beings: brothers and sisters, nurses, and what not.

Even after the education by means of language has begun, it is most important to retain the appeal through primitive passive sympathy. An educational story told without expressive signs of affect will remain meaningless to the young boy or girl infant and an educational story told with improper gesture, facial expresssion and voice intonation might attain an entirely perverted meaning to the infant. An amusing instance of the latter is the following: A little boy — about seven years of age — had evidently been told by his mother about the suffering of the early Christians in the Roman arena. Some time later, he came across a picture representing Christians being torn to pieces by lions in the amphitheater. Here is what he said, quite excitedly: "Look, mother, there is a poor lion who has not got a Christian." This boy's perverted attitude to the theme cannot be due to anything but the failure on the part of the mother of using the proper expressive signs of affect when originally telling the boy the story of the Christians. My example could easily be multiplied.

An important promoter of moral development in young people is the example of others. We might speak of this as the role of *active hero-worship.* It is effective particularly in middle and late infancy, in adolescence and sometimes in early youth. Hero-worship might imply a regressive tendency in one particular respect. The hero, in a manner, reifies virtue just as the individual virtuous act reifies it. Thus it represents a regression from the abstract conception of virtue to the more concrete conception. I have qualified the educationally significant hero-worship by the attribute *active.* This is because there exists a type of hero-worship that is educationally useless, a passive hero-worship. Such a hero-worship is frequently a part of the "crushes" between boy and boy and between girl and girl which are not uncommon in school age; I have referred to them earlier as instances of adoption. Characteristic is the attitude of complete submission on the part of the afflicted younger member to the older schoolmate. Contrary to that type of passive hero-worship, active hero-worship is a sentiment in which is contained, on the one hand, profound admiration of the hero, on the other hand, the positive ambition to resemble the hero. Only when hero-worship contains that conjunction of conative attitudes does it become a factor of importance in moral education. Admiration, according to McDougall, is an attitude of self-submission connected with curiosity or wonder; the active desire to resemble the hero would spring from the self-assertive impulse. The hero might be a real living individual with whom the young person is in contact, or it might be a fictitious individual encountered in fairy tale or in more mature reading.

In middle and late infancy, hero-worship as a rule works as follows. To begin with the youngster admires the hero because of a rather primitive trait, let us say, because of his courage as a fighter. In this respect, primarily, the boy wishes to resemble him. Gradually, however, he learns that his hero possesses higher virtues, honesty, righteousness, frank outspokenness and what not, and, then, his desire to resemble him expands into an ambition to be like him also in these respects. I can perfectly well remember that genesis of hero-worship from my own boyhood. All we boys used to read the stories of Buffalo Bill. Any number of stories about him were translated into my native tongue; the detective story, at that time, did not dominate the market of literature for young people. We admired Buffalo Bill primarily because he was a good hunter, or, because he could always defeat in fight the Indians; that was the source of our most primitive admiration — in that respect, we were eager to resemble him. Then, reading about him, we were told that he was an honest man who could always be trusted to carry valuable mail, that he was a man who always took the side of the weak and defenseless, and so forth. As a consequence, our desire to resemble him began to include the ambition of being like him also in respect of these higher virtues. Today, Pop-eye of the comic strips could be a very educational figure. He is admired by most youngsters because of his efficiency in fist fights. Unfortunately his higher "virtues" reach little beyond his liking of spinach. In this respect, he is of a restricted significance in inducing many children to eat spinach the food through which they will attain his own vigor; he sustains, perhaps, the results of the wise mothers who have induced that healthy food-appetite by appeal to primitive passive sympathy; he might even succeed where the wise mothers have failed. Though Pop-eye could be made into a far more significant educational hero, in all fairness to him, it should be admitted that continually he displays a protective attitude toward little "Sweet Pea," an attitude that must be credited as a higher virtue. Perhaps, the same should be granted in regard to his tolerant attitude towards his "pest" associate Mr. Wellington Wimpy. In adolescence and youth, the hero is immediately viewed in the light of his all round merit and so the genesis of hero-worship is slightly different.

The adolescents and youths of our generation are inclined to scorn the supposition that they harbor hero-worship. Their testimony, probably, is supercilious rather than true. I have known a few medical students to be profoundly moved when they pledged their adherence to the ethics laid down in Hippocrates' oath; I have known even a larger number of young nurses deeply moved when pledging themselves to uphold the standards of the oath of Florence Nightingale. I believe that instances of that kind illustrate that hero-worship is not dead among the youth of our generation. The fact that hero-worship is still genuine is brought out by the bitter resentment of any derogatory attack upon the hero. For instance, a young boy of my acquaintance had developed active hero-worship of Abraham Lincoln. At the end of one semester, his older brother, who was a sophisticated student of history at one of our leading universities, came home and said to him: "Professor N, the foremost authority on American history, has shown with absolute certainty that Lincoln's name would never have become so glorified in the annals of our nation, had he not been assassinated at the time he was." That statement was distinctly painful to the younger brother.

The great role played by hero-worship in the development of moral sentiments carries with it a message to all educators, namely the necessity of guiding the young disciples in choosing the proper heroes. In case the hero chosen is a good gun man, but, aside from that, a crook, an immoral and anti-social person, the development of the young worshiper might take the course described in the very first motion picture about the "dead end kids."

We have called the last level in the development of character the level of sublimation-integration. As yet, little has been said about the integration of sentiments; little need be said. As the moral sentiments develop in the course of moral education, they range themselves along a vertical scale of values. At the upper part of the scale are the great dominating master-sentiments, at the very top the greatest of the latter, the ideal which might be pursued throughout a whole lifetime. Any adult of healthy character possesses such a scale of values — a set of goals differently important of pursuit. Any number of literary and lay statements imply such scales of values, for instance: "I would rather have enemies who respect me, than friends who do not respect me," or: "I would give five hundred dollars to save the life of my dog; I would give all I own to save the life of my wife; I would give my own life for the safety of my country, but not even for my own country would I sacrifice my honor." Statements like these indicate that sentiments have entered into a hierarchy containing higher and lower tendencies the former dominating and controlling the latter. The total of a man's conative tendencies — hierarchally integrated — constitutes his character. With this in view, we might symbolically depict harmonious adult character as a triangle through which is drawn several lines parallel with its horizontal base (Fig. 8).

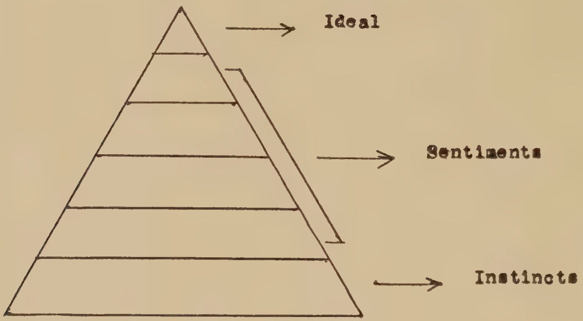

Fig. 8

As we proceed through this triangle from the base upward, the different successive layers we transverse represent levels of increasingly sublimated sentiments in a hierachical arrangement. The top of the triangle stands for the dominating master-sentiment or ideal, the very base layer stands for the primitive inborn instincts. As has been mentioned earlier, the instincts are the ultimate sources of all the energies which express themselves in our conative life. These energies might be expanded on any one level of the sublimated sentiments. The master-sentiment controls the distribution of energy throughout the hierarchy but does not generate it. Character acting as a total unit or whole is what we call *will* or *self-reflective intent.*

Though, in harmonious character the master sentiment or ideal controls the totality of our conative life, this does not mean that instinctive activity is entirely obliterated. The welfare of the individual requires that the instincts function on the level of their natural need-fulfillment, but the sublimated form of this function is sustained by the higher sentiments, even by will or self-reflective intent.

I have suggested that acts of sublimation recur until the very climax of man-or womanhood; in turn, this would mean that character-building continues unto that stage in the life-course. I shall indirectly support the latter supposition by calling to attention a singular truth. Nothing more disastrous could happen to a person than the full achievement of his highest ideal. Such achievement would signify psychological death — there would be nothing more for which to strive. Many old people survive biologically that moment of psychological death. They cease to strive toward the future; instead, they take the course of retrospecting upon their past, dwelling entirely in the world of their memories. It can be observed, however, that, as we approach the goal of our ideals, the ideals seem to unfold themselves into progressively higher aspirational goals, opening increasingly elevated routes for the expression of will. A high ideal, then, seems to be potential of self-elevation. This, of course, is not an autochthonous power of the ideal, it is the effect of the striving will itself. The richest and fullest life is a life of progressive ideals interrupted at the very threshold of achievement. The wish to die biologically before one dies psychologically is an honorable wish. In that sense we may all pray: "Let us die young!"

Few, if any of us are fortunate enough to develop fully harmonious character. The least fortunate are the ones who, throughout life, are torn between strong but incompatible ambitions. They will suffer severe conflict which might resolve itself into repression and lead to mental disorder. Since this is a chapter in special psychopathology, it shall not be discussed in the present work.

And, this concludes the story of the growth of human character.

> 'Tis thus the mercury of man is fix'd,
> Strong grows the virtue with his nature mix'd.[12]

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[12] Alexander Pope. *An Essay on Man,* II, 11. 177-78, Poetical Works, London: McMillan, 1873, p. 205.

CHAPTER VII

The Psychological Self in Action: General

WHENEVER, KNOWINGLY, we strive to attain a practical end or goal — be our striving prompted by a simple instinct, by a simple or complex sentiment, or by character as a whole — it seems as if our striving, or conation, manifests itself in three distinguishable acts: (1) in a peculiar experiencing, of excitement, the emotional experience, which differs in different modes of striving seemingly indicating the nature of the need to be satisfied by our conation; (2) in the thinking of the goal or, rather, of a certain relation between an object and the self the realization of which is believed to satisfy the striving or, in case that realization is obstructed, in the thinking and planning of means to overcome the obstruction; and (3) in overt activity serving the realization of the relation between the object and the self that is believed to satisfy the striving. These three expressions of conation we might call, respectively, *the affective act, the cognitive act,* and *the locomotive act.*

It is of eminent importance to consider these acts *sub-acts of conation at work.* For this means that the conative unit is activated as a whole by an event which remains an unknown, or an (X), until the energies of the unit have been converted from potential into active energy. This would be true no matter what level in the hierarchy of character to which the unit belongs. The surging energies of the disposition, activated as a unit, then, expand themselves into these sub-acts. First after such an expansion the activating event (X) becomes known in the terms of awareness qualities. The attached diagram indicates these relations. The diagram is self-explanatory. The disk stands for anyone purposive disposition, the inleading arrow for the activating event, the outleading arrows respectively for the three sub-acts.

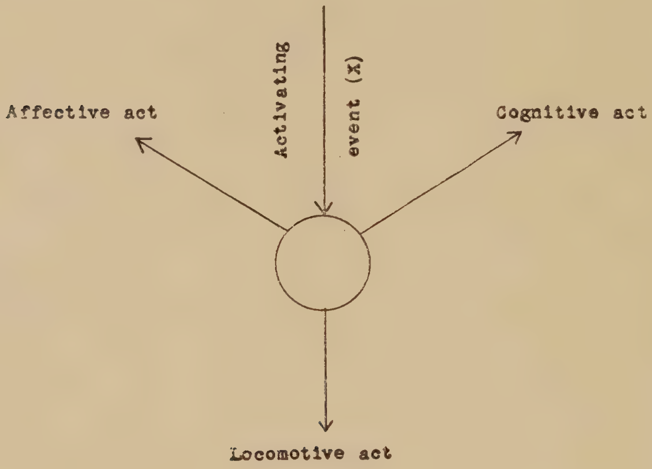

Fig. 9

The above supposition constitutes a feature of great theoretical import; it is an interpretation that is indispensable in the system of consistent conational psychology. It emphasizes — to re-state the matter — that there is neither any perception nor any affect that precedes the instigation of an adaptive impulse. On the contrary, the disposition is evoked as a unit by an unknown event (X) in the physical field; only after that evocation does our conation crystallize into acts of experiencing. Although the opposite supposition, namely, that cognition in some form precedes and calls into play conation, might seem to be supported by naive experience — as, for instance, when we perceive the threatening danger situation and, then, run away — we must disregard the face value of naive experience for the sake of a consistent scientific hypothesis. Since, actually that disregard does not severely violate common sense but merely places an item of experience in a new logical setting, our academic claim is not a relinquishment of empiricism. The weighty significance of the reflections submitted are brought into relief by the following considerations. If, in attempting to interpret mental life, we were irremeably compelled to postulate some form of simple anoetic awareness (sentience), preceding and calling into play conation, we would also be compelled to modify fundamentally our metaphysics. We would not be able to maintain the strict dualistic-interactionistic hypothesis concerning the mind-body relation upon which most conational psychology is founded; we would not be able to uphold even the distinction between a physical and a mental realm, the distinction which is so clearly stated in Sherrington's assertion that in nature we find, on the one hand, the world of energy systems, on the other hand, the world of the finite recognizable minds; events in the former proceed in accord with the laws of physics and chemistry while events in the latter consist of acts of conation guided by the foresight of an end on the part of a striving and experiencing self. This, all, is because *anoetic sentience unavoidably presupposes sensing nerve-tissue or conscious quality — it is true of a very elementary kind — that would arise as an epiphenomenon upon purely physical-physiological nervous process.*

In McDougall's, in most respects, masterful volume, *Outline of Psychology,* one can read on and between the lines the following three assertions: (1) all perception is meaningful, (2) the meaning of perception depends upon conation, and (3) perception evokes conation. It is impossible to escape noticing the tautology of these three terms. The dilemma, which I have frequently discussed with McDougall, he attempted to circumvent by the proposal that the simple perception that evokes conation is of very low level of meaning, becoming in a richer sense qualified after conation has been evoked. McDougall's argument still retains the concept of anoetic sentience and so has to be condemned. I have attempted to resolve the quandary by certain postulations which were first presented in 1934, in my little book, *Conation and Our Conscious Life.* I shall recapitulate the essence of that endeavor in the present volume. Samuel Alexander, esteemed the foremost British metaphysician in modern time, though McDougall's senior by several years, was — whenever he wrote psychology — much influenced by his younger friend. Nevertheless, he seems to avoid the pitfall of McDougall's position when he writes: ". . . mere apprehension is always primarily an action and . . . the object we apprehend . . . the outcome of such action. We do not first know or cognize an object and then act upon it, but we cognize it through and in acting upon it. We know through doing . . . we become aware, then, of external things and their characters, because they evoke from us physically, or provoke us to . . . they being the things they are and we the creatures we are, certain responses in which we are aware of them, and they are revealed to us . . .[1] The typical act of cognition is one which begins with an impact upon our bodies from some object in the external world and ends in a recoil of our body upon the external world. In this physical chain, mental action, that is vigilant conation, is interpolated in the shape of awareness on one side of a revealed object upon the other. Sometimes the return to the external world is delayed, as when a perceived object sets going not the grasp of the object but a train of ideas, which when it is ended, sooner or later, returns to the world in the form of efferent response."[2]

Charles Spearman, whose major contribution to psychology is in the field of cognition, has formulated three laws which he calls *laws of noegenesis.* They are: (1) knowing experience, (2) apprehending relations and (3) educing correlates. They are all laws of sequence in the development of cognition. The first law of noegenesis, as briefly formulated by himself, reads:

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[1] Samuel Alexander, *Beauty and Other Forms of Value,* London: MacMillan, 1933, pp. 8 ff.

[2] *Ibid.,* p. 12.

"A person tends to know himself and items of his own experience."[3] This law seems to imply that prior to the knowing of cognitive contents, there is some sort of experience that is felt as a state of consciousness rather than as a cognized object. This experience would seem to be independent even of the simplest act of cognition. It is possible that McDougall's supposal of a very simple perceptual experience anteceding and provoking conation, was inspired by the doctrines of Spearman. They two were lifelong friends and must have had the opportunity to discuss with one another all possible problems of psychology. Much criticism could be brought against Spearman's first noegenetic law.

I believe it is very important to recognize that affective experience is a specific sub-act of conation to be distinguished from the cognitive act. Unfortunately, many psychologists have failed to acknowledge such a distinction. The confusion of the two conscious acts seems to have arisen largely from one or the other or from both of the following fallacious forebodings: (1) A peculiar *a priori* bias to conceive of all consciousness, all awareness, as of the nature of cognition, and as ultimately constituted of a mosaic of sensory elements (mind-stuff). This view is neither logically requisite nor empirically veracious, becoming conspicuously invalid as soon as we keep in mind that the true criterion of cognition is the synoptical meaning of a psychological object; and (2), a failure to distinguish actual affective experience from retrospection upon the latter. In retrospection upon our emotions, as expressed in the sentence, "I know that I was afraid," we are cognizing or meaning a past experience, but we do no longer suffer that experience *in puris naturalibus.* However, the fact that our emotions can be made the object of retrospective thinking should not benight our recognition that these, at the time of their occurrence, as experiences actually represent a specific kind of their own that cannot be properly described in terms other than their own.

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[3] Charles Spearman, *Psychology Down the Ages,* London: Macmillan, 1937, II, p. 125.

McDougall, who has contributed to psychology the only doctrine of our affective life which is at the same time comprehensive and applicable, does not seem fully to have realized that the experiencing of affect is a mental act just as the cognizing of an object is a mental act. For, he speaks of affects as states of consciousness which accompany or qualify our strivings or goal-seeking activities. As we shall see later, his failure to conceive the experiencing of affect as a separate mental act, accounts for a certain limitation in his examination of so-called *tastes,* a topic matter in psychology which, otherwise, he has treated in the most creditable fashion (cf., chap. xi).

Lay language does not seem to portray the experiencing of affect as a mental act but, rather, as a state of consciousness. Mostly, though not exclusively, when a statement concerning affects is made, it is made in the terms of an intransitive sentence. For instance, we say: "I am afraid," or, "I feel afraid." The predicates of either of these sentences are intransitive verbs: respectively, the verbs *to be* and *to feel.* Each one of these verbs is followed by a predicate-completion, the adverb *afraid* which qualifies a state of being. A true formulation of the act of experiencing affect should have the transitive form just as the formulation of an act of cognition has the transitive form: "I know it." Even the formulation "I have fear," would be more adequate than the formulation "I am afraid," for, it contains a transitive verb, *to have,* followed by a noun, *fear,* the latter denoting the object of the transitive *having.* But, that formulation also falls short in one respect. The transitive verb *to have* is *too passive.* Better would be the formulation "I do fear," were it not that, in this sentence, *fear* is not a noun but a tense of the verb *to fear,* and the transitive *do* serves merely to give a special emphasis to the *state of being afraid.* In dealing with affective experiencing, we would be far better off if we had *one* definite transitive verb to imply the act of experiencing affect.

In 1934, I constructed such a verb, namely, the verb *to emove* (the verb *emove* is to be found in Webster, but is condemned as obsolete). With the use of that verb, I can construct transitive sentences which would be adequate to our proposal, such as "I emove fear," "I emove anger," "I emove love," "I emove wonder," etc. In all these formulations, the verb, *to emove,* is less passive than the verb *to have,* and the words following it are *nouns* indicating the objects of the transitive act of emoving: *fear, anger, love* and *wonder,* In conational psychology, broadly speaking, the concept of intransitive states of consciousness is obsolete; it is replaced — or should be replaced — by the concept of transitive acts of apprehending: on the one hand, of *emoving* and, on the other hand, of *knowing* or *meaning.* States of consciousness were the subject matter of analysis of the structuralistic school of psychology of the late E. B. Titchener; as has been remarked earlier this school — for practical as well as for academic purposes — is dead. The focus of attention of psychologists is now the *dynamism* whether of phenomena or of behavior. The Gestalt psychologies of Köhler and of Levin, as well as the conational psychology of the Scotch tradition, different as they are in most respects, have at least that much in common that they are dynamic, that is to say, that they are interested in events rather than in static situations, in transitive functions or acts rather than in any intransitive *status quo.*

It has been indicated that the three sub-acts of conation, the affective act, the cognitive act, and the locomotive act serve respectively very important adaptive purposes. The affective sub-act informs us about the nature of a need that requires adaptive intervention on our part; the cognitive sub-act informs us about the relation between an object and the self which has to be realized in order that that need be satisfied; the locomotive sub-act, finally serves the application of our body-tool to our adaptive task in such a manner as to bring about the realization of the ego-object relation required by the need. The last act is guided by the two former acts. Into it are expanded the energies of the body-tool as directed into adequate purposive patterns by affection and cognition.

In normal striving of everyday life, there seems to obtain a lawful reciprocal relation between the three sub-acts of conation. Whenever locomotive activity is intense, the conscious activities, the affective and cognitive — though perhaps not entirely in abeyance — are indistinct, or reduced. The difference between this state and the state of distinct experiencing is brought out in the comparison of the described condition with *desire proper.* Desire proper arises whenever the overt locomotive expression of conation is hindered by an obstacle, whether this be an actual material or a social barrier between the individual and his goal, or merely the spatial or temporal remoteness of the latter. In desire proper, the conscious expressions of conation are distinct; the affect is strongly felt and the goal clearly defined in its significant properties. Turn now to the two conscious acts *per se.* It appears that, whenever the affective component of desire is distinctly and intensively experienced, the cognitive component is either comparatively diffuse (blind rage, blind love) or comparatively simple, constituting essentially the recognition of the ego-object relation believed — if realized — to satisfy the desire. In desire, when goal-attainment is suspended, the emotion is prone to become painful. Even more would that be the case were there not inherent in desire a tendency to plan means of overcoming the suspending obstacle. The strength of this tendency is an index of the level of civilization of man. The primitive man acts on blind emotion, the civilized man on intellectual planning. Anyhow, so wise seems to be nature's design that, as soon as the cognitive act of planning begins, the affective component of desire decreases in insistence, sinking even to a negligible level of distinction and intensity. There exists, then, a reciprocal relation between the two conscious sub-acts of conation as well as between these two together and the locomotive sub-act, the tenor being that prominence of one in a certain measure subdues the other in a similar way as prominence of the locomotive sub-act subdues each one of the two conscious acts. Layman recognition of this relation is implied by expressions such as "burning passion" and "cool intellect." An indispensable accessory to the energy-concept in psychology is the concept of a drainage of mental energy. The reciprocal relation between the three sub-acts of conation can be explained by the drainage of energy within the impulsive unit itself. One outlet of expansion blocked, the expanion through remaining routes will necessarily be reinforced.

Few psychologists have paid heed to the relations I have here brought to attention. An exception from the rule is the Finnish psychologist and cultural anthropologist Yrjö Hirn. Hirn was compelled to deal with the matter in connection with his endeavor to explain artistic creation as the reliever of emotional tension of the artist. He writes:

"It is a familiar observation . . . that strong feelings make *clear thought* impossible . . . The converse has perhaps not been stated so often. Still it does not admit of doubt that *intensified intellectual activity* may . . . overcome the tyranny of hypernormal feeling . . . Joy which is so great as to be a burden . . . and numbing despair, must inevitably decrease when there is an increase of *distinctness in their intellectual elements.* The more we can compel ourselves to *contemplate with cool and clear attention* the causes and manifestations of such high-strung states, the more we are also able to master them . . . In artistic creation we are not concerned with an intentional or unintentional effort to overcome feeling . . . So irreconcilable, however, is the conflict between *emotional excitement* and *intellectual activity,* that the latter . . . must neutralize the excess of feeling. A state of strong pleasure or pain can never be rendered intelligible to outsiders, unless its expression is bridled and disciplined by thought. By being thus embodied in a fixed form the feeling gains in conceivability as well as in infectuous power. But while the effect on spectators and listeners is in this way increased, the artistic form influences the feeling subject himself in a quite different way. Its very clearness and distinctness necessarily brings something of the calm which all excitement seeks as a relief . . . When a poet seeks to give shape and form to his own sufferings by means of fiction, the relief he obtains is no doubt in part an effect of the diversion of actvity into the channels of expression. But to a still greater degree it may be the result of the healthful influence exercised by the *contemplation of objective reality* in the finished work of art. Such an influence is unmistakable in the most illustrious instance of artistic production as a life-preserving expedient: Goethe's *Leiden des jungen Werther.* In his memoirs the old poet frankly and unreservedly describes how, when lascerated by the conflict between hypochondriac, suicidal thoughts and an ineradicable love of life and cheerfulness, he resorted to the old homely remedy of writing down his sufferings. He lays especial stress on his desire to give definite form and body to his vague feelings of distress. And as we read that afterwards, when the work lay finished before him 'bound in boards, as a picture in its frame, so as to prove the more convincingly its individual concrete existence,' he could feel 'free and joyful, and entitled to a new life,' we cannot but explain this renewed courage to live as a result of the *sensation of security and support which the beholding of external form affords* . . . Thus, to begin with, by its character as a palpable, objective reality, the work of art may diminish the subjective disturbance in which it originates . . . The more therefore the work grows in definiteness in the thought and under the hand of the artist, the more it will repress and subdue the chaotic tumult of emotional excitement . . ."[4]

Although in the passage quoted, Hirn's terminology is very different from mine, I am thoroughly convinced that he intends to describe the same phenomenon as I have dealt with in different terms; that is, the reciprocal relation between the affective and cognitive sub-acts of conation.

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[4] Yrjö Hirn, *The Origins of Art,* London: Macmillan, 1900, pp. 102 ff. (italics mine.)

One of Lewin's pupils, Tamara Dembo, has been given high credit for some laboratory studies of the emotion of anger.[5] She is said to have followed in detail "the processes of *destructurization* (Destruktierung) and *homogenization* (Homogenisierung) of the field, which is very significant of the dynamics of anger." It is possible that, if translated into the common terms of meaningful human language, Dembo's experiment would turn out to be — at least in part — an experiment upon the reciprocal relation between the affective sub-act (as represented by one single emotion, anger) and the cognitive sub-act of conation. However, I am not entirely certain that my surmise is correct, for the translation, indeed, is very difficult.

Many psychologists have expressed a view which, perhaps unwittingly, seems to touch upon the reciprocal relation between the locomotive and the affective sub-acts of conation, the view, namely, that emotion appears only when action is hindered. McDougall defies that supposition. He writes: "If, on any occasion when some propensity is strongly excited within you, the situation is . . . one with which you can deal by some well-directed activity, your energy flows out in such activity . . . Such overt outwardly directed activity . . . seems to drain off into these channels the greater part of the energy released; and in consequence, the emotional disturbances . . . are proportionately slight. On the other hand, if there is no obvious line of effective action, nothing to be done about it . . . the emotional quality of the experience is more prominent. This is the element of truth in the statement, made by many authors, that emotion is experienced only when and if action is checked. The statement greatly overstates the element of truth and obscures the facts. Yesterday I was walking alone in an English beech-wood, a place than which none could be safer and more peaceful; suddenly a rabbit, than which no creature could be less dangerous, started up from the undergrowth about my feet; and, absurd as it may seem, I experienced instantaneously a faint shock of excitement which had quite recognizably the quality of fear. Many persons can . . . cite similar instances of instantaneously undeniable fear under conditions where action is quite unrestrained." [6]

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[5] Tamara Dembo, "Der Ärger als dynamisches Problem," *Psychol. Forsch.* 1931, 15, pp. 1-144.

It is possible that the position of McDougall as well as the position of the psychologists he defies contain each an overstatement, and that the controversy has its solution in the reciprocal relation between the locomotive and the affective sub-act of conation as here described. This, perhaps, will become clear when we consider that the very inertia of the body-tool applied by mind in the pursuit of its purposes constitutes a temporary hindrance of immediate forward-going to the goal. In the experience reported by McDougall, sudden fright probably coincided with a very violent sudden effort to move the body, perhaps, in a sideway or backward step. In that case, obviously, the inertia of the body would be temporarily a definite obstacle to the desired goal attainment and, consequently, the conditions of affective experience would be present. It is interesting to realize that the body at a time is a means of attaining a goal and an obstacle to goal attainment. Heed should be paid also to the fact that, in most instances, a goal is spatially remote, that is to say, the realization of the desired relation between an object and the self requires locomotion and translocation in space of the body. Such a spatial remoteness of a goal is also a temporal remoteness. Each signifies an obstruction of the immediate goal-achievement and, accordingly, affect would be experienced. In the sheerly hypothetical case when your mere wish for the apple instantaneously materializes the apple in your hand, no emotion would be a part of your desire.

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[6] William McDougall, *The Energies of Men,* p. 150.

The fact that in self-reflective intention or will we seem many times to pursue a goal with little experienced affect would be accounted for by the strong prevalence in our endeavor of cognitive activity functioning on a very high level of intricate reasoning. The relative absence of emotion in that situation would be explained by the drainage of energy which basically underlies the reciprocal relation between the affective and the cognitive sub-acts of conation.

I have strongly emphasized that affection as well as cognition are transitive mental acts. In order continually to sustain that emphasis, I shall consistently use the expression: the conscious acts, whether the affective or the cognitive, *yield* respective items of awareness. This will satisfy a practical necessity imposed by the very structure of language, while at the same time it brings into salience a theoretical item of import.

We have been examining in general terms what happens when a conative disposition is operating; more especially, we have given heed to the distribution of the energies of anyone such disposition into the three sub-acts of conation. But we have not as yet sufficiently considered the very process of activation of the disposition as a unit. The only remark in this regard has been the general one that some physical force activates the unit, that is to say, converts its potential mental energies into active mental energies, whereupon, in turn, the latter act back upon the physical body releasing its potential energies and distributing these into the complex patterns which result in adaptive behavior. This circuit of events deserves a further examination and elaboration, a task which I shall attempt to achieve by the aid of a series of spatial diagrams or homologues; the basic one of these is of vast pregnancy, expressing verily a comprehensive philosophy of nature. It is evident, however, that any one such spatial diagram can be only remotely adequate; on the one hand, it will express in spatial terms items of nature which are non-extended such as the finite minds; on the other hand, since the diagram is by necessity two-dimensional, it cannot even properly represent the three-dimensional perceptual space; even less can it represent a fourth spatial dimension which, in the light of certain evidence to be examined in the metaphysical part of our treatise, we might have to postulate. The fourth dimension cannot be thought of except in mathematical terms; it is as impossible of concrete mental representation as would be the supposition that all things in the world which exist today, at this very cross-section of time, *are* everything that they have ever been and everything that they shall ever become. Despite the inadequacies of our homologue, we beg the reader to do his best in trying to understand it and that which in a humble measure it is designed to clarify. The homologue will be frequently referred to throughout the remaining part of this work and, if it is not understood from the beginning, its future significance will be lost. It need not be said that, herewith, I do

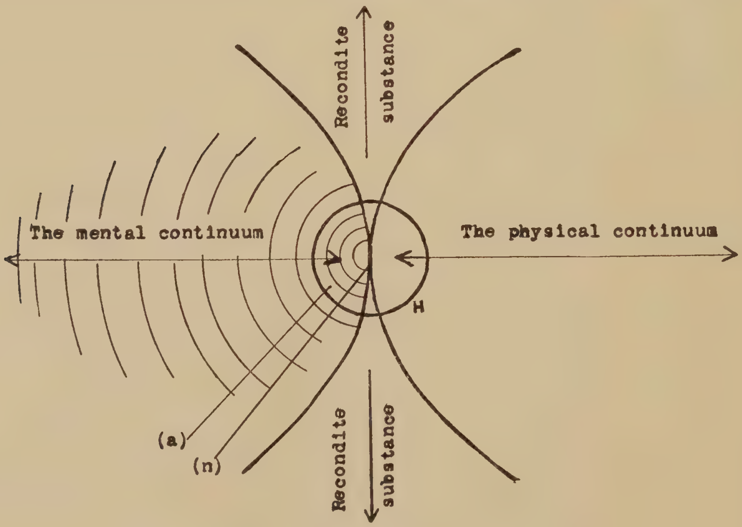

Fig. 10

not advocate the acceptance of my metaphysics but, rather, its being given the opportunity of an examination with the view of establishing whither its postulates lead.

The diagram above consists of a circle and of the two arms of a hyperbola. The latter meet in a mathematical point which spatially coincides with the center of the circle. Let us consider the circle (H) to represent anyone living human being, any individual of the species *homo.* Let us further consider the right arm of the hyperbola to represent an infinite physical continuum. The hyperbolic arm lends itself well to the symbolization of infinity, since its ends never meet and since — as they are infinitely extended — they will embrace an infinite measure of two-dimensional space. Scanning the diagram, we notice that if vertically divided the major part or the right half of the circle (H) falls within the physical continuum. This particular is meant to designate that, in virtue of his bodily property, any one human being belongs — in the physico-chemical sense — to the world of the energy-systems or to the material world. To proceed, let us consider the left arm of the hyperbola to symbolize an infinite mental continuum. How should such a continuum be conceived? Evidently it is not spatial; but, infinity is not exclusively a spatial concept; it might be temporal, it might also be axiological. Personally I have chosen to conceive of the mental continuum as an infinite hierarchy of increasingly worthy or dignified values; that view of the mental continuum is entirely different from William James' conception of the mental continuum as a vast sea of mind stuff.[7] Examining the diagram, we notice that the major part of the left half of the circle (H) falls within the left arm of the hyperbola. This symbolizes that, by virtue of its mental property, or of its property of being a finite recognizable mind, each human being belongs to the value hierarchy of the mental continuum. We have observed that the human mind — its character — constitutes itself a hierarchy of sentiments under the dominance of an ideal; also that individual human character is isomorph with an individual scale of values. This can be symbolized in our diagram by drawing within the mental part of the circle (H) parts of circle peripheries which are all concentric with the outer contour of (H). If we project the diagram of character submitted in Fig. 8 to the diagram of Fig. 10 we would have to allow a spatial reversal. The ideal, or the highest individual value, which in the former diagram would be represented by the very upper apex of the triangle would, in the latter diagram, correspond to the outer and broader layer (a) of the sector that stands for the individual mind, while, the lower values, in a decreasing gradation, would be represented by the succession of narrower half-discs closer to the mathematical point toward which the two arms of the hyperbola converge. The value homologue of the instinct would then coincide with the inmost circle sector (n). We might go beyond the border of the individual mind and draw concentric circle-sections throughout the mental continuum. These would stand for the various levels of values constituting the continuum; thus, we would have symbols of the extra-individual as well as of the intra-individual part of the value-hierarchy, each continuous with the other. Far out in the vastness of the physical continuum would be our warming sun; at the most distant thinkable or nth level of the mental hierarchy of values would be our "biding" God. (Incidentally, in so far as we assume mental guidance of behavior on all levels of the animal kingdom and perhaps even on some levels of plant life, this means that we commit ourselves to the concept of an animal or plant mind or soul. In such a case, the (H) of our diagram need not necessarily stand for a human being, it might as well stand for anyone living being manifesting the signs of mind.)

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[7] Cf., William James, *Human Immortality,* Boston: Houghton, Mifflin, 1898.

Examining, again, our diagram, we notice that a certain upper and a certain lower part of it has not as yet been accounted for. These parts are labeled as recondite substance. Its possible properties shall be surveyed in the metaphysical section of this volume. Provisionally, I do not identify recondite substance with the fundamental, unknown reality of neutral monism. If I did, I would confess myself to philosophical monism. Since, unlike so many philosophers, I am not hell-bent for monism, I prefer to consider recondite substance an essence of its own, coadunate with matter and mind, and not as the sole reality of which these are mere attributes. That position would make me — if the expression be permitted — a philosophical triadist, not to be confused with the triadism of the Welsh bards. I am an amateur painter. I know that I can build a pictorial composition upon three given nodal-points distributed on a canvas; I can also build one upon two nodal-points, or upon one. The difference between the first and the last composition would be that the final unity of the former would be due — so to speak — to "*empirical convergence*," whereas the unity of the latter would depend upon *a priori* construction. Which one is to be preferred?

In the next diagram (Fig. 11) like in all the following ones

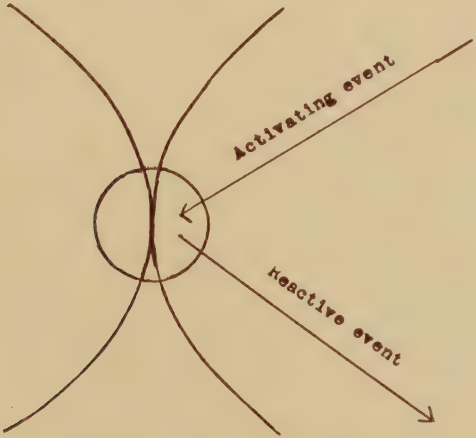

Fig. 11

in the series, the basic symbols are the same as in the first diagram. Here, in the second diagram we find transversing the physical continuum two lines. The upper one of these begins in a point that is on a higher horizontal plane than the center of the circle or the convergence point of the two arms of the hyperbola; it descends from the former point exactly in a direction towards the latter. The lower line begins in a point within the body part of the human being; from there it descends in a direction straight away from the center of the circle toward a point in the physical continuum which is lower than the former point. The upper lines stands for any one *activating,* the lower for any one *reactive* event. The precise meaning of these terms, activating and reactive event, shall be made clear shortly. In all the following diagrams, any line that like the upper line in the present diagram descends toward the center of the circle always symbolizes an activating event, and any line that, like the lower line in the present diagram descends in a direction straight away from the center of the circle always symbolizes a reactive event. Examining the diagram, we notice that the activating and the reactive events alike partly progress through that part of the physical continuum which constitutes the body of the individual. The direct continuation of the activating event into the bodily organism is by way of afferent nervous process. Afferent nervous process is excited in some receptor organ; from that organ nervous impulse is then carried toward some central part in the cerebrospinal nervous system. The beginning progress of the reactive event within the bodily organism is always by way of conduction in the efferent part of the nervous system. Efferent nervous process always proceeds from some central part in the cerebrospinal nervous system toward a more peripheral part of the body, a muscle or a gland. Both afferent and efferent nervous events are physiological and consequently material events. They are always events in the physical continuum. The description of the activating and of the reactive events, especially their intraorgasnismic sections, is schematic and slightly over-generalized. However, it fully suffices for our present purposes.

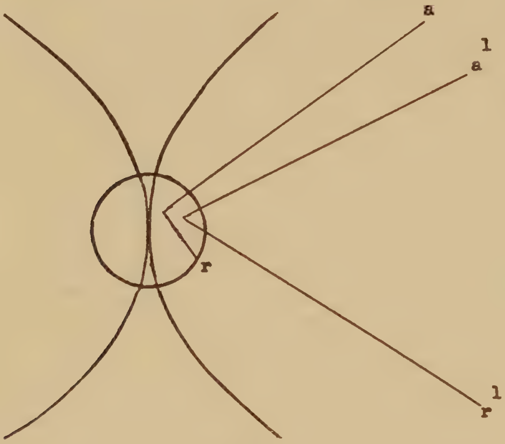

Fig. 12

The third diagram (Fig. 12) illustrates the use of our homologue by representing symbolically two instances of simple reflex action, more especially, the patellar reflex or the knee jerk and the pupillary reflex to light. The former is symbolized by the progression (a^1-r^1), the latter by the progression (a-r). Let us analyze each one of these at a turn. In the case of the patellar reflex, the activating event (a^1) has one extra-organismic and one intra-organismic part. The extra organismic part is the swinging in environmental space of the doctor's hammer; the intra-organismic part is the afferent nervous process set up by the impact of the hammer upon a certain part of the leg below the knee cap. That impact excites receptors of pressure whereupon afferent nervous impulse proceeds inwardly toward the spinal column. At a certain point in the spinal column the nervous event turns into efferent nervous process. Conduction continues outwardly toward the extensor muscles of the calf resulting in the kick of the leg. The efferent nervous conduction constitutes the intra-organismic part of the reactive event, (r^1). The extra-organismic part of that event would be at least a considerable displacement of air resulting from the translocation in space of a major limb; it might be more· in case a chair is placed in front of the leg the motion of the leg might overturn that chair. Considering the case of the pupilary reflex, the extra-organismic activating event (a) is a light-ray projected into a human eye; the intra-organismic part is afferent nervous process excited in the receptors of vision in the retina and carried to the mid-brain. In this case, at some point in the mid-brain, the nervous event turns into efferent conduction to the muscles which control the pupil, resulting in the contraction of the latter, these two together constituting the reactive event. Both the patellar and the pupillary reflex are entirely physical-physiological events; that is to say, they are events entirely within the physical continuum. It is true, however, that the patellar reflex can be interfered with by will or conscious intent; it can be either reinforced or, in a measure, inhibited by will. The reinforcement by will is perhaps easier than the inhibition. There is no corresponding voluntary control of the pupillary reflex.

The fourth diagram (Fig. 13) represents symbolically instinctive action. Here, the activating event (a) is an extra-organismic event of such a kind that the welfare of the living being requires adaptive action. The intra-organismic part of the activating event is still afferent nervous process, but contrary to the case of the reflexes, here the nervous process proceeds to the very center of the circle or to the mathematical point where the two arms of the hyperbola converge. That point is the mathematical point of psycho-physical interaction which we like to think of as being somewhere within the roof-brain. There are logical difficulties in localizing any non-spatial entity in space. A non-extended entity might be as well here as there, or as well everywhere as nowhere. These difficulties, however, we have to regard as part of the riddle of interaction and so proceed as if they were mathematical unknowns, (X's). Arriving, then, at the mathematical point of interaction the activating event evokes a purposive disposition (the instinct). The energies of that disposition are expanded into the mental acts of affection and cognition. The little disc (c) in our diagram symbolized these two mental acts. If, consequently, we should project our earlier diagram in Fig. 9 to the present diagram, the two upward slanting arrows of the former would in the latter be represented by the said disc. Affection and cognition, then, guide the reactive event (r) resulting in adaptive behavior. The reactive event here corresponds to the locomotive sub-act of our earlier diagram. The reactive event has its intra-organismic beginning part, which is again efferent nervous process leading to the excitation of muscles and glands. The extra-organismic part of the reactive event is overt locomotion on the part of the organism, a loco-

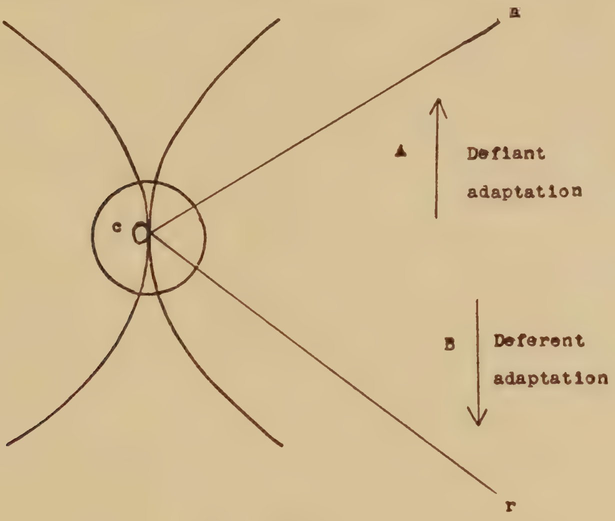

Fig. 13

motion structured by the pattern of selective release and control of the energies of the body by the conative self who affects (emoves) and thinks (cognates), and wills. The extra-organismic reactive event establishes a condition of safety. The adaptation might be of one or the other or, perhaps, of both of two kinds: defiant adaptation or deferent adaptation; by the former I mean that, in some way or the other, the reactive event impinges itself upon the activating situation modifying that situation in a direction to make it no longer a threat to the living being; by the latter, I mean that the reactive event modifies the organism itself in such a direction that the threat of the activating event is nullified. Anger and fear, perhaps would be the most typical representatives respectively of defiant and deferent adaptation. In the diagram, I have symbolized the two modes of adaptation respectively by the arrows (A) and (B), the former aiming "defiantly" towards the activating event, the latter "deferently" away from the activating event.

Our last diagram (Fig. 13), though I have discussed it only in reference to instinctive activity, applies as well to the working of any one adaptive sentiment, or to the function of the character as a whole.

It has been observed that some instincts, perhaps all, are associated with what we have called *appetite.* The appetite has been described as a physiological activating event, arising within the body itself. Appetite *per se* does not result in directed, but rather in random behavior. Only with the presence of a second activating event, the entrance into the proximate environment of the adequate object of the instinct does the reactive event become directed and adaptive.

The fifth diagram (Fig. 14), symbolizes the situation described. The little line (a^1) symbolizes the appetite; it is one of the activating events. Judging from human experience, appetite in itself evokes some mental disposition producing desire for some end or goal. That desire consists of affection as well as of imagination of the ego-object relation which, if realized, is believed to satisfy the need of the desire. Since the imagined object has no definite spatial reference, the reactive event following activation by appetite will be a random search. This is symbolized by the curvy line (r^1). Only with the appearance of a second activating event (a^2), the presence in the proximate environment of the adequate object of the instinct, the reactive event (r^2) becomes directed and adaptive. Incidentally, the *presence* of an object in the environment means that the object is in a position which allows it to excite some kind or the other of the receptors of the organism, these receptors in which afferent nervous process is instigated, most importantly, the distance receptors.

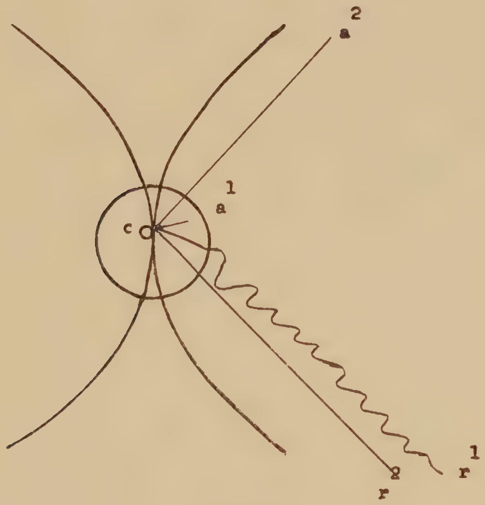

Fig. 14

Of the five diagrams, so far discussed, the first symbolized a general philosophy: my conception of man's place in nature; the second diagram, in a general way implied the course of activation of natural events with which man is concerned, and the nature of the reactions on the part of man to such activation. The third diagram, in the terms of the general homologues, depicted the course of events in reflex action, whereas the fourth and fifth diagrams symbolize the chain of occurrences in the case of goal-directed activity. The fourth diagram applied not only to instinctive activity, but also to any activity prompted by sentiments or by character as a whole. As appetite has been considered chiefly in connection with instinctive activity and since it is impossible to say in what measure, if at all, sentiments or character are subjected to variations of the appetite, the fifth diagram should be regarded as applying exclusively to instinctive activity. The last two diagrams both concern adaptive conation. We shall see later that man is probably capable of spontaneous conation and perhaps even of inspired conation. Neither of these two forms of striving are called forth by adaptive need or necessity; they are not evoked by any activating event within the physical continuum. As human acts, they are closely related to our creative acts; the attribute of creativeness, I have suggested is the most uniquely human of all man's attributes. Much more shall be said about spontaneous and inspired action as well as of creation in a later part of our treatise.

The general consideration of the psychological self is herewith in part effected. Before resuming it, we shall examine in detail each one of the three sub-acts of conation: the affective, the cognitive and the locomotive sub-act.

CHAPTER VIII

The Affective Sub-Act of Conation

THE PSYCHOLOGY of our affective life would be a relatively barren chapter in the science of man were it not for the important contribution of William McDougall. The type of psychologist with whom I had my abecedarian training as a young man was the honest veteran psychophysiologist; Alfred Lehmann of Copenhagen, my mentor, was perhaps the foremost representative of his time of that school. He was one of the many pupils of Wilhelm Wundt who had been reared in the Leipzig laboratory. *Qua* philosophers, as a rule these psychologists were psychophysical parallelists; had they been instead — as, no doubt, some of them were — epiphenomenalists and accordingly materialistic monists, this would not essentially have influenced their technique of inquiry. They labored with care and with conviction of the pregnancy of their effort. Lehmann, perhaps more than the rest, had his attention focused upon the psychophysiology of affective states. By various methods, emotions and feelings were induced in his laboratory subjects while coincidently these subjects' physiological reactions were objectively measured. At that time, the physiological measurements were limited largely to the recording of respiration rate, of pulse rate, and of the relative blood-distribution to the various parts of the body (the famous plethysmographic studies). The results were discouraging, for it turned out that the physiological readings did not discriminate between anger and joy; neither did they discriminate well between fear and sorrow. These four were the essential affects investigated. A school different from the one of the psychophysiologists was the school of Edward Bradford Titchener. He produced simple laboratory affects in subjects trained in introspective analysis. These subjects, who were biased elementarists and sensationists, testified as to the sensations of which an affective state was compounded. The upshot of the endeavor has been summarized by McDougall in a perhaps unduly bitter pronouncement. "The crowning achievement of his (Titchener's) . . . career was the conclusion that *pleasure is bright pressure while pain is dull pressure.* With the announcement of this momentous conclusion, the method seemed to have reached its ultimate goal, to have completed its task, to have solved the last of its problems . . ."[1]

Contemporary — though senior to Lehmann and Titchener — were two theorists in the field of the psychology of affection, Carl Lange, the Dane, and William James, one of the greatest minds of modern American thought. Independently of one another and about simultaneously, these men advanced the theory of emotions that is known as the Lange-James theory. It utilizes the evidence obtained from the objective studies of the psychophysiologists as well as the evidence obtained from the introspective studies. The Lange-James theory is so well known that I shall state it merely in the terms of a dictionary definition. "(1) According to Lange, emotions are identical with the changes in the circulatory system as these are induced by emotive situations. (2) Upon perception of certain emotive situations there follow marked organic "reverberations": changes in circulation, glandular action, contractions of both smooth and skeletal muscles. Concerning the relation of these to the emotion, James set forth three views without clearly distinguishing them. (a) The organic reverberation causes the emotion. (Nature of the latter not stated.) (b) Through kinesthetic and organic sense organs, we perceive the organic reverberation. The fused perception is the emotion. (c) The organic reaction is the emotion. Only the last is similar to Lange's independently stated view."[2] Add to this the definition from another psychological dictionary. The Lange-James theory is "the theory that in emotional experiences the stimulus first arouses a motor response, and that the experiencing of these organic responses constitutes the feeling. (Formulated independently by Wm. James (1884) and C. G. Lange (1885) in opposition to the intellectualistic view that the feeling precedes and arouses the motor responses."[3] It is my impression that the major difference between the Lange and the James formulation of the theory is essentially that the former gives a slightly greater emphasis to the vasomotor events in the body, the latter to the bodily events which directly excite kinaesthetic sensations.

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[1] William McDougall, "Experimental Psychology and Psychological Experiment," *Char. and Pers.,* Vol. I., No. 3, 1933, pp. 197-98.

The generation following the great pioneers brought the psychophysiology of emotions into a new interesting development. This coincided with the birth of a relative young branch of biochemistry, notably, endocrinology. Walter B. Cannon found that very violent emotions in the species dog coincided with an enhanced secretion of the suprarenal glands.[4] In the terms of the conational psychology here set forth, his researches seem to indicate that suprarenal secretion is at least a part of the reactive event preparing the locomotive sub-act of primitive impulsion.

Cannon was also interested in the study of the emotional behavior of decorticated animals, finding that the primitive impulses continue to express themselves after decortication.[5] Sir Henry Head has observed enhanced affectivity in brain-injury cases in whom some connections between the cortex and the midbrain were severed.[6] The upshot of both Cannon's and Head's studies would seem to be that primitive emotional behavior has its seat in a part of the brain that from the evolutionary standpoint anteceded the development of the roof-brain. These findings are in harmony with observations on narcotization. Slight narcotization, which assumably affects most powerfully the cortex of the brain, brings a person back to a tantrum level of conduct — the level of infancy — when primitive instinctive impulsion expresses itself with brutal intensity and without deliberation. Deeper narcotization, of course, produces complete coma. In the terms of my conational psychology, the findings indicate that in primitive affective-locomotive action a part of the mid-brain is always instrumental, whereas, in the higher self-reflective acts of volition, mid-brain as well as cortex are instrumental.

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[2] Horace B. English, *A Student's Dictionary of Psychological Terms,* p. 70.

[3] Howard C. Warren, *Dictionary of Psychology,* p. 146, Cf., William James, "The Emotions," *Mind,* 1884, and Carl Lange, *Om Sindsbevaegelser,* Copenhagen: Jacob Lund, 1885.

[4] Walter B. Cannon, *Bodily Changes in Pain, Hunger, Fear, and Rage,* 2d. Ed., New York, Appleton, 1915

[5] Walter B. Cannon, "Neural Organization for Emotional Expression," *Feelings and Emotions; The Wittenberg Symposium,* Worcester; Clark Univ. Press, 1928.

These are some of the main trends in the modern study of our affective life. Only a very small number of affects were subjected to examination; a number that not even approximates the one that lay language implies. It is to McDougall we owe a more comprehensive systematic exposition of the psychology of affection. The key to his doctrine is to be found in the plain common sense analysis of experience. I submit on the following page a diagram that incorporates in their proper interrelations all the affects with which McDougall has dealt (Fig. 15). The diagram is my own, but it is, in every detail, adequate to McDougall's design.

Like most psychologists after the scientific revolution of a century ago, McDougall distinguishes between *emotions* and *feelings.* The former he refers to one or the other of two groups, *primary* and *blended emotions.* The primary emotions accompany the working of the primitive instincts; there are as many primary emotions as there are instincts. Naming them is easy with some, but difficult with others. This is because the English language

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[6] Henry Head, *Studies in Neurology,* London; Frowde, 1920.

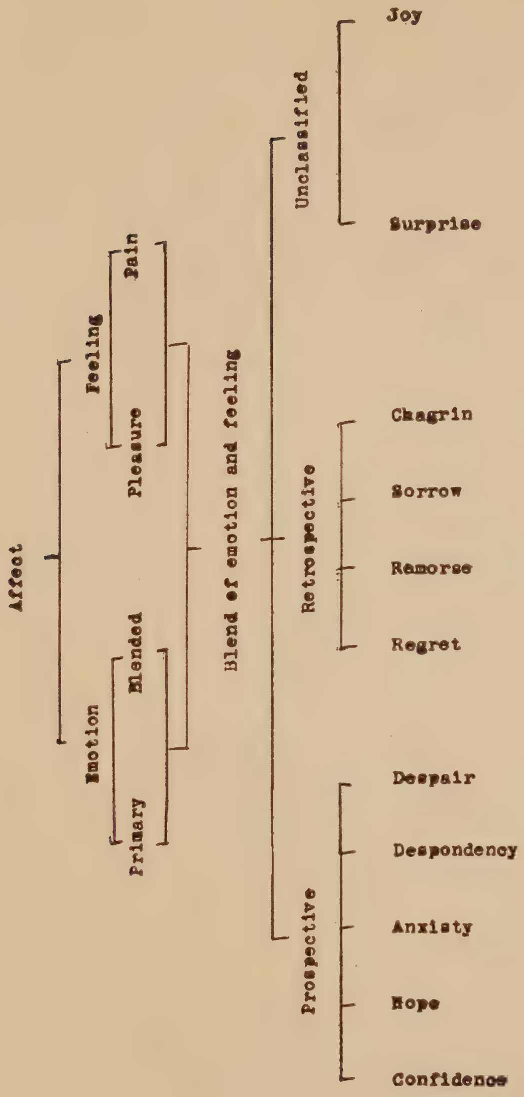
Affect
Feeling
Emotion
Pleasure
Pain
Primary
Blended
Blend of emotion and feeling
Unclassified
Retrospective
Prospective
Joy
Surprise
Chagrin
Sorrow
Remorse
Regret
Despair
Despondency
Anxiety
Hope
Confidence

Fig. 15

has no single term for some of the primary emotions. Sometimes, we have to use for denotation a combined expression such as, for instance, *emotion of,* followed by the name of the corresponding instinct, or others.

The three instincts subserving the nutritious healthiness of the organism, the food-seeking instinct, the instinct of repulsion, and the acquisitive instinct, are accompanied respectively by the following emotions: *hunger, disgust* or *nausea,* and the *emotion of ownership.* As we remember, there were four instincts whose major purpose was to promote group-life; the protective instinct, the gregarious instinct, and the instinct pair: self-assertion and self-submission; whenever at work, these are accompanied respectively by the emotions: *tender emotion, emotion of loneliness* or *nostalgia, elation* or *positive self-feeling,* and, *negative self-feeling.* The fact that in naming the last two emotions, we have to use combined expressions incorporating the term *feeling* should not confuse the reader. Positive and negative self-feeling are not feelings proper; they are *emotions.* The emotion accompanying the working of the sex instinct is termed, in the English language, lust. Lust, in English, is not at all equivalent with the German *Lust.* In German, *Lust* and *Unlust* are idioms for the simple feelings which, in English have been utterly inadequately denoted as *pleasure* and *pain.* Three instincts were coordinated because of the fact that they were likely to follow one another in a definite temporal order, the instinct of escape, the pugnacity instinct, and the instinct of appeal; they, whenever at work, are qualified respectively by the emotions of *fear,* of *anger,* and of *distress.* At last, there obtained a group of instincts which were coordinated for no positive reason, but, rather for the negative one that they could not be properly classed with any of the other groups; the curiosity instinct, the constructive instinct and the instinct of sleep. These, whenever activated, are accompanied by their own respective emotions: *wonder* or *emotion of curiosity, emotion of creativeness,* and the emotional awareness of *fatigue* or *sleepiness.*

McDougall holds that, in all the primary emotions, there is one common constituent, the direct awareness of conation or of mental effort, an experience which varies only in intensity, but not in quality. Contrary to William James, he forcefully denies that awareness of effort is a fusion of kinaesthetic sensations; his position in this regard has been examined on an earlier page. Nevertheless, he does not entirely repudiate the Lange-James theory of emotions; he adopts what one might call a compromise position. Repudiating the emphasis of James, he seems to favor the emphasis of Lange. For, he thinks that the qualitative differences between such emotions as hunger, fear, anger, lust, etc., depend upon internal physiological reaction which he regards as part of instinctive behavior: changes in the endocrine secretions, vasomotor changes, and what not. These differ in the different instincts; they excite interoceptor receptors of a variety of kinds, and the sensations ensuing fuse indiscriminately with the direct awareness of conation inherent in the emotions. In so far as the physiological changes and consequently the sensations vary with different instincts, the quality of the emotions will differ. McDougall's position, then, is a compromise with the Lange-James elementaristic-sensationistic theory.

In the human being several instincts might be at work simultaneously. This, for instance, would be the case, whenever conatively complicated sentiments are evoked, these sentiments which incorporate into one unit several instinctive dispositions. Whenever several instinctive impulses are simultaneously at work, we experience a blend of all the emotions which respectively correspond to each of the impulses. McDougall has skillfully analyzed a number of such blends of emotion.

"The quality in which we detect affinity to both anger and disgust," he writes, "is well suggested to most of us by the name 'scorn' . . . Scorn is very apt to be complicated by positive self-feeling (or elation); we feel ourselves magnified by the presence of the moral weakness or littleness of the other, just as on a lower plane the physical weakness or smallness of those about one excites this positive self-feeling, with its tendency to expand the chest, throw up the head, and strut in easy confidence . . . scorn, then, is a binary compound of anger and disgust, or a tertiary compound, if positive self-feeling is added to these; . . . contempt is a binary compound of disgust and positive self-feeling, differing from scorn in the absence of the element of anger . . . Fear and disgust are very apt to be combined, as on the near view of a snake or an alligator; and in some persons this binary emotion is provoked by a large number of animals . . . and also by the mere appearance of some men, though more often their characters. It is the emotion we call 'loathing,' and, in its most intense form, 'horror' . . . Admiration . . . is distinctly a true emotion, and is as certainly not primary. It is distinctly a complex affective state and implies a considerable degree of mental development. We can hardly suppose any of the animals to be capable of admiration in the proper sense of the word, or is it displayed by very young children . . . There seem to be two primary emotions essentially involved in the complex state provoked by the contemplation of the admired object, namely, wonder and negative self-feeling or the emotion of submission . . . admiration is more than wonder. We do not simply proceed to examine the admired object, as we should one that provokes merely our curiosity or wonder. We approach it slowly, with a certain hesitation; we are humbled by its presence, and, in the case of a person whom we intensely admire we become shy, like a child in the presence of an adult stranger; we have the impulse to shrink together, to be still, and to avoid attracting his attention; that is to say, the instinct of submission, of self-abasement, is excited, with its corresponding emotion of negative self-feeling, by the perception that we are in the presence of a superior power, something greater than ourselves . . . Is . . . the emotion of admiration capable of being evoked in us only by other persons and their works? It is obviously true that we admire natural objects, a beautiful flower or landscape, or a shell, or the perfect structure of an animal and its nice adaptation to its mode of life. In these cases no known person is called to mind as the object of our admiration; but, just because admiration implies and refers to another person, is essentially, in so far as it involves negative self-feeling, an attitude toward a person, it leads us to postulate a person or personal power as the creator of the object that calls it forth . . . As an example of the further complication of an emotion, let us consider the nature of our emotion if the object that excites our admiration, is also of a threatening or mysterious nature, and, therefore, capable of exciting fear — . . . Awe is of many shades, ranging from that in which admiration is but slightly tinged with fear to that in which fear is but slightly tinged with admiration. Admiration is, then, a binary compound, awe a tertiary compound. And awe may be further blended to form a still more complex emotion. Suppose that the power that excites awe is also one that we have reasons to regard as beneficent, one that, while capable of annihilating us in a moment, yet works for our good, sustains and protects us, one that evokes our gratitude. Awe then becomes compounded with gratitude and we experience the highly compound emotion of REVERENCE. Reverence is the religious emotion *par excellence* . . . GRATITUDE, which enters into the emotion of reverence . . . is itself complex. It is a binary compound of tender emotion and negative self-feeling. To this view it may be objected — If tender emotion is the emotion of the parental instinct whose impulse is to protect, how can this emotion be evoked by the Divine power? The answer to this question is — In the same way as the child's tender emotion toward the parent is evoked, namely, by sympathy. Tender emotion occupies a peculiar position among the primary emotions, in that, being directed toward some other person and its impulse directly making for the good of that other, it is peculiarly apt to evoke by sympathetic reaction . . . the same emotion in its object; and this sympathetically evoked tender emotion then finds its object most readily in the person to whom it owes its rise . . . The act that is to inspire gratitude must make us aware not only of the kindly feeling, the tender emotion, of the other toward us; it must also make us aware of his power, we must see that he is able to do for us something that we cannot do for ourselves. This element of negative self-feeling, then is blended with tenderness in true gratitude, and its impulse . . . to humble oneself in the presence of, its object, more or less neutralizes the impulse of the tender emotion to approach its object; the attitude typical and symbolical of gratitude is that of kneeling to kiss the hand that gives . . . Into reverence of the kind we have considered negative self-feeling enters from two sources, as an element of admiration and again as an element of gratitude . . . An emotion of the first importance which belongs to this group is 'pity'. We feel pity for those who are in pain or distress; and we feel pity the more readily the more fragile, delicate, and helpless is the object we contemplate . . . Pity is the tender emotion of the parental or protective instinct, tinged with sympathetic pain or distress . . . Some of the secondary emotions can hardly be experienced save in relation to objects for which we have acquired sentiments or enduring affective-conative attitudes. Reproach may serve as the type of such emotions. It seems to be essentially a blend . . . of tender feeling with anger. The impulses of the two instincts concerned are so opposed in tendency that they necessarily conflict; each tends to exclude the other. Hence we hardly feel reproach toward a stranger. If a strange child upsets the ink over our manuscript, or persists in making noises that interrupt our work, we are apt to feel merely angry and act accordingly. But, if the child is one whom we have learned to love, one whom we cannot see or think of, without the stirring of the parental impulse with its tender emotion; then our angry impulse is checked by this very different impulse, its expressions are modified, and the quality of our emotion is that complex one we call reproach . . ."[7]

Some blended emotions are very difficult of analysis. Despite considerable effort, I have not been able to break up into its components the complex emotion of jealousy. I do not even know if the emotion is directed toward your beloved or toward your rival. Most likely it is directed toward a relation between the two. In jealousy, you might kill your rival as well as your beloved or — like Othello — both. Even in the destruction of the beloved, hatred must be blended with tender emotion.

> Be thus when thou art dead, and I will kill thee,
> And love thee after. One more, and this the last:
> So sweet was ne'er so fatal. I must weep,
> But they are cruel tears; this sorrow's heavenly,
> It strikes where it doth love . . . [8]

Like most of the older psychologists, McDougall recognizes only two qualities of feeling, *pleasure* and *pain* — the German *Lust* and *Unlust.* A far better translation of the terms denoting feelings would be *pleasure* and *unpleasure.* This would avoid any confusion of the feeling of pain (unpleasure) with the perceptual experiencing of bodily pain. Even better than the terms pleasure and unpleasure would be the idioms I have myself used: *satisfaction* and *dissatisfaction.*

To the pioneer psychophysiologists, pleasure and pain were qualities of awareness that attached to simple sensory stimulation; this adherence was considered due to the reverberation of such a stimulation into the organs of the body — there exciting interoceptor receptors. A theory was broadly held that pleasure and pain depended directly upon the intensity of sensory stimulation. Sensory excitation was regarded a catabolic process, and, in so far as anabolism kept step with the latter, sensing was accompanied by pleasure. If, on the other hand, the sensory stimulation was too intensive to allow anabolic process to keep step with the process of catabolism, pain would ensue from sensory excitation. Nearly all of the pioneer psychophysiologists recognized only two simple feelings, pleasure and unpleasure (Lust and Unlust). Wundt, alone, held a unique position, because he considered the realm of simple feeling experience to be a three-dimensional system. In addition to the dimension pleasure-unpleasure (Lust-Unlust) he called to attention two more dimensions of simple feeling: *excitation* and *calming* (Erregung-Beruhigung) and *tension* and *release* (Spannung-Löhsung). The former pair of simple feeling in his opinion coincided with the sensory stimulation of the eye by homogenous light (color); the latter with the stimulation of anyone perceptual field with impressions which possessed the property of being rhythmical.[9] As to the Erregung and Beruhigung of spectral colors, Wundt is right. Goethe, in his Farbenlehre, has called to attention that colors around red have an exciting effect while the colors around blue have a calming effect; also that, at the green side of the color circle, the exciting effect of the red and the calming effect of the blue neutralize one another harmoniously; while, at the opposite side, the exciting effect of the red and the calming effect of the blue do not neutralize one another, but produce the labile conflict characteristic of the psychological effect of the violet color.[10] Goethe's observations have been tested in the laboratory by modern researchers, more especially, by Wundt, by Lehmann, and by myself.[11] The results unequivocally bear out Goethe's assertions. If you have a number of colored squares, say twenty, and you let a number of subjects compare each one with the rest testifying, in one series, which is the most exciting color, in the other, which is the most calming color, you will get identical curves for all your subjects. All the curves will indicate that the colors around red and orange are exciting whereas the colors around blue are calming. In case you have your subjects compare the same colors and state their personal liking of, or preference for these, you will get curves which differ from individual to individual. It has been thought that even certain animals are excited by the red color assumably because red is the color of blood. That supposition has been disproved concerning the species cattle by G. M. Stratton, who showed that any one color, assuming that it is in motion, excites the cattle.[12]

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[7] William McDougall, *Outline of Psychology,* pp. 331-37.

[8] William Shakespeare, *Othello,* Act. V, Scene II, Complete Works, (Ed. W. J. Craig), London: Oxford Univ. Press; Humphrey Milford, 1928, pp. 1125-26, l. 18-22.

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[9] Wilhelm Wundt, *Grundzüge der Physiologischen Psychologi,* II, pp. 294-301.

[10] Johann Wolfgang v. Goethe, *Zur Farbenlehre, Sämtliche werke,* Ed. 40 Stuttgart; J. G. Cottasche Buchhandlung Nachfolger, 1907.

[11] Helge Lundholm, "Om färgernas inverkan på medvetenhetstillståndet," *Psyke* 2, 1918.

Wundt's second supposition that experiences of tension and release accompany all rhythmical perceptual impression can hardly be set aside. Most psychologists, however, even those of his own following, have questioned whether they — as well as the exciting and calming adjuncts of certain colors — are of sufficient simplicity to be properly regarded as feelings. This leaves the only feelings pleasure and pain.

Pleasure and pain, as conceived by McDougall, do not coincide with simple perceptual impressions. Instead, pleasure is regarded a quality of awareness that ensues as soon as one or the other purposive action on our part has successfully resulted in goal-attainment, whereas pain ensues whenever purposive activity fails of such. Pleasure and pain might be experienced also in the course of goal-seeking activity depending, respectively, upon anticipation of success or failure. In that bearing, the two feelings take on a role of the greatest importance. For, the pleasure of anticipated success, augments our striving, while the pain of anticipated failure paralyzes our effort. In this respect pleasure and pain function like a kind of psychological enzymes.

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[12] G. M. Stratton, "The Color Red and the Anger of Cattle," and "Cattle, and Excitement for Blood," Psychol. Rev., 1923, pp. 321-325 and pp. 380-387.

Their operation according to McDougall is a psychological ultimate which cannot be reduced to simpler terms. In the psychology of learning it attains eminent significance, because it substitutes for the logically amphigoric *law of effect* formulated by Thorndike. According to that law, pleasure attained through random movement, stamps in the patterns of behavior through which pleasure was gained, whereas pain ensuing from random movements stamp out the patterns through which pain came to pass. According to this law, cause, in a peculiar manner, is considered to be retroactive and effect actually to precede cause. To McDougall's theory there could be no logical objection, for, the cause of enhancing or depressing effort and so of stamping in and stamping out behavior patterns is a pleasure and pain that antecedes fulfilment of a goal and that arises in the anticipation of success or failure respectively. As shall be seen later, I do not agree with McDougall in considering that role of pleasure and of pain a psychological ultimate. In fact, I shall reduce it to simpler terms.

The considerations offered indicate that emotion, whether primary or blended, might blend further with pleasure or with pain. Such a blend gives rise to complex affective experiences, many of whom have a denotation in the English language and many of whom can be classified, or referred to definite groups. These blends McDougall used to call derived emotions. In his last systematic work on general psychology, *The Energies of Men,* however, he has wisely abandoned that term and uses, instead, the descriptive expression, *blend of emotion and feeling.* There are, at least, three categories of blends of emotion with feeling which might be fairly clearly distinguished. These groups might be called respectively: (1) prospective affects of desire (expression mine), (2) retrospective affects of desire (expression mine), and (3) an unclassified group whose members cannot be properly referred to either group (1) or to group (2). The affects of group (1) are the following: *confidence, hope,* *anxiety, despondency* and *despair.* McDougall illustrates their significance and interrelation by a fiction, Major Priestly's description of a party of Polar explorers tormented by desire for a good meal.

McDougall writes: "Let us take this type of crude but strong desire, springing directly from an instinct, and develop imaginatively the emotional experience of such a party; we may suppose it to have used up its supply of food while returning on foot from the Pole and still separated by fifty miles of snow-covered ice from a store of food, deposited on the outward journey. All members of the party strongly desire to reach this store of food. This strong desire springs primarily from the food-instinct; but it is reinforced by the intellectual understanding that the survival of the party depends upon their reaching this goal; for this understanding brings to the support of the primitive hunger-impulse many remoter desires, the desire to see wife and child again, to report the scientific results of their labours, to announce their success to an admiring world; in fact, all those desires which together constitute what common speech calls 'the love of life' or 'the fear of death.' All members of the party are strong, the weather is good, the snow under foot is hard, the position and distance of the food-store are well known. Impelled by strong desire they tramp on with *confidence.* That is to say, they see no reason to doubt their ability to reach their immediate goal, the store of food, which means not only a good meal but also safety. When they have travelled but half-way to their goal, an adverse wind springs up, bringing clouds and a threat of snow. Each man knows that, if the wind should blow stronger and the snow fall thickly, they will need all their strength to achieve their goal. Success no longer seems certain. Their confidence is no longer sure and untroubled. But they *hope* for the best. That is to say, the prospect of possible failure converts confidence to hope. As they march on hopefully, the adverse wind grows stronger, and the snow falls more thickly. Each man secretly becomes a prey to *anxiety.* He still does his best to be and to appear hopeful. But now his desire prompts not only the imagination of a good meal and of a successful issue to all their labours, but also a careful consideration of all the possibilities and chances of failure as well as of success. During the phases of confidence and of hope, their striving was sustained and reinforced by the pleasurable anticipation of success; perhaps they joked about the enormous meal they were presently to enjoy. Now, if they converse at all, it is only to discuss the prospect of the wind and snow abating; and the painful contemplation of possible failure depresses their energies. But the transition from confidence to hope and to anxiety is gradual; hope and anxiety alternate with every veering of the wind and every gust of snow; there is no sharp line to be drawn between the two states. We might recognize finer divisions of the emotional scale by speaking of anxious hope and hopeful anxiety. The weather grows still worse; the men feel their strength ebbing; every step is a painful effort. At length one blurts out: 'We shall never make it!' And all in their hearts know that there is too good ground for his remark. 'Oh! Shut up!' they say. 'We must make it.' And they trudge on. But now anxiety passes into *despondency.* Presently they agree to sit on their sledge to rest awhile; and the attitude of despondency is clearly expressed by each relaxed figure, the bent back, the drooping head, the eyes staring vacantly. Their imaginations now are filled with painful depressing anticipation of final failure . . . They rise and struggle on, with utmost exertion of will-power. But now they come upon a wide opening in the ice, stretching indefinitely far in either direction across their course. Now they know that they cannot reach their goal. In consequence, despondency passes into *despair;* and they fall on the snow, content to pass into the last sleep which will end their labours." [13]

The second group of blends of emotion and feeling, the

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[13] William McDougall, *Ibid.,* pp. 339-41.

restrospective affects of desire, holds affects such as: *regret, remorse, sorrow,* and *chagrin.* The first two of these McDougall exemplifies by continuing the story of the Polar explorers: "Although primitively desire looks only toward some goal imagined as lying in the future, yet, in the developed mind, desire may be directed towards the past. Hence, we must recognize also *retrospective emotions of desire.* Of this group . . . regret naturally follows upon despair, when the attainment of the desired goal is no longer possible, when the possibility of attaining that goal lies wholly in the past. For then desire still prompts the imagination to dwell upon the goal; but the desire is wholly retrospective and, being futile and necessarily thwarted, is painful in proportion to its strength. Such painful retrospective desire is *regret.* In regret we dwell longingly upon what might have been. In our Polar explorers regret will succeed despair, if they retain sufficient vitality to be mentally active as they lie awaiting death. They will regret that they did not do this or that, did not make their food-stores at shorter intervals, did not push on a little more rapidly when the weather was good; a thousand regrets, as we say, or one painful retrospective desire after another, may occupy their minds. And if the leader, or any member of the party, sees clearly that the disaster was due to some fault of his, some misjudgment, some failure of moral or physical strength on his part, then self-reproach or angry humiliation or shame will complicate his regret and so generate that most painful and very complex state of feeling we call REMORSE." [14]

The word *sorrow* — when properly used — refers to tender regret, that is to say, it refers to the blended affect you experience when your protective instinct has become forever frustrated through the death of a dear friend and, yet, your desire to cherish persists to operate on the imaginary plane of retrospection or memory. The term *chagrin,* on the other hand, refers to hateful regret; you experience that blended affect when your enemy has prospered or when you yourself have failed to destroy him, physically, mentally, socially or economically. The term *grief* would be used by most people as a synonym of sorrow. In letters of condolence to friends who have lost a beloved one, we use the term grief as often as the term sorrow. McDougall thinks that there is a subtle difference between the two and he is probably right. "The name Grief," he writes, "is properly used to denote an emotion closely allied to sorrow, but differing from it in that, in the sentiment from which it springs, the tender protective impulse is subordinated to the impulses of extended self-regard." [15]

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[14] William McDougall, *Ibid.,* pp. 341-42.

The third group of blends of emotions and feelings, the unclassified group, probably contains a very large number of species. As a matter of illustration, I shall mention only two: *joy* and *surprise.* Concerning the affect of joy, McDougall writes as follows: "The joy that springs from love is the true opposite of sorrow in respect of its conditions; for, as sorrow comes from the baffling of the tender desires of love, joy attends the tender efforts on behalf of the loved person; it is essentially the progressive satisfaction of the desires of love. But joy differs from sorrow not only in that it comes with the success, while sorrow comes with the baffling, of the desires of love, but in two other respects also. Sorrow is essentially an emotion of retrospective desire; but joy derives from both retrospective and prospective desires. Further, while sorrow derives from the desires of love only, joy attends the success (or the recollection or the prospect of success) of the desires of hate, as well as of those of love, especially perhaps the desires of the complex form of hate properly called revenge." [16] And, concerning surprise, McDougall convincingly asserts: ". . . it seems clear that surprise presupposes some more or less definite anticipation of the course of events; surprise is experienced only when we suddenly apprehend a state of affairs that contradicts our anticipation. Now the anticipation or expectation implies . . . the working of some impulse, some desire or aversion, that prompts us to anticipate. Surprise, therefore is dependent upon, or derived from, the anticipating desire; . . . In nearly all cases of intense surprise the . . . [affect] is complicated by fear or by curiosity, or by both of these; and it is very apt to pass over into one or other of these primary emotions. It is this complication of surprise that tends to obscure the fact that it belongs to the class of [blends of emotion and feeling]. I doubt whether the most skilful artist should depict "surprise" in a way that would be surely distinguishable from both fear and curiosity." [17]

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[15] William McDougall, *Ibid.*, p. 343.

[16] *Ibid*, p. 344.

McDougall has a notion that the experience of *belief* and of *doubt* are merely intellectualized forms of confidence and of anxiety, arising whenever goal-seeking activity proceeds on the high plane of self-reflective reasoning. Though there might be some superficial truth in that view, I feel convinced that McDougall has abandoned it since I wrote my book, *The Psychology of Belief.* As we shall see, when later we pursue that matter, McDougall's position concerning belief and doubt cannot be unequivocally upheld.

Questionable, also, might be his doctrine of moods. Nearly unanimously, psychologists have considered a mood an affective state without an explicitly cognized object. Horace B. English defines a mood as a "relatively mild and enduring or recurrent emotional state; an echo of an emotional reaction with or without remembrance of the original stimulus." [18] The older psychologists recognized only two moods, the mood of pleasure and the mood of pain or, rather, in the terms of their far more adequate nomenclature, the mood of Lust and the mood of Unlust. Since Lust and Unlust were directly connected with sensory stimulation, they were thought to endure after the sense-impression had passed.

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[17] William McDougall, *Ibid.*, pp. 344-45.

[18] Horace B. English, *A Student's Dictionary of Psychological Terms*, p. 81.

McDougall has a far broader conception of moods. "A mood is most commonly engendered by the evocation of some strong emotion which is for any reason denied of free expression. Hence the introvert is more subject to moods than the extrovert. When we cease to think of the object or situation that has excited emotion, without having freely expressed the emotion and achieved the natural goal of the impulse, the mood remains, a resonating echo, as it were, of the emotion. Primarily the mood implies a more or less subconscious persistence of the conation and the emotion, a subexcitement of the affective-conative disposition. No doubt this subexcitement is commonly aided and abetted by some persistence of the organic resonance of the emotion, in some cases probably by a chemical residue. In fact, we can draw no sharp line between the emotion and the corresponding mood; we can only distinguish them by agreeing to call the affective-conative excitement an 'emotion', so long as we continue to think of the object that excites it, and to call it a mood, if it still persists when we cease to think of the object. If we do this, then we must recognize that emotion normally subsides into a mood, before the excitement wholly passes away." [19]

I am inclined to question moods as psychological experiences, or at least, I would give them a very narrow arena of display. This is for the well-known reason that any conative attitude is so utterly likely to generate the imagination of its object. For instance, if for some reason or the other, we are apprehensive, we are apt to imagine all sorts of danger situations when actual danger is not immediate. That is, perhaps, the most conspicuous instance of affect or, more properly, conation, generating thought. It would be true in regard to any other so-called mood. As soon as the object is imagined, by definition, we suffer an emotion and not a 'mood'. There occur, however, extremely brief — one might say: well-nigh — meteoric experiences of 'mood proper'. Suppose we go to bed anticipating something unpleasant to happen the following day, something to which we look forward with apprehension. The next morning, the moment we awaken, immediately we might feel submerged in a contourless mist of apprehension; this experience precedes any memory of the event that we fear. It lasts only a second or two; for, it is soon followed by the recollection of the cause; notwithstanding, as long as it lasts, it is a true mood because it is an affective experience without an object. Episodes of that kind are elusive and, yet, they would constitute the nearest approximation to contentless affective revelation, that is to say, to mood. Pleasurable anticipation naturally may produce similar morning moods.

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[19] William McDougall, *Outline of Psychology,* pp. 359-60.

The speculation is interesting that primitive religion might spring, at least partly, from a fear of the unknown, that is from a fear that has no structured object. Primitive man, it would seem, by reifying such forces of nature as he does not understand, personifying these as gods or demons or what not, might actually reduce his fear. Apparently, he creates a gallery of phantoms — semi-palpable because semi-anthropic — less awe-inspiring than the nebulous obscurity of the unknown. The occupants of that gallery, in turn, might become, on the one hand, the prototype of his deity, on the other hand, the one of his evil protagonist.

McDougall asserts that "the mood renders us peculiarly susceptible to the reexcitement of the corresponding emotion. Thus, if you have recently been startled or frightened, you will be more readily startled again; for the persisting subexcitement of the fear-disposition renders it more susceptible to a new excitement than it is when comparatively quiescent. Or, if you have recently been angered and have not worked off your anger in free action and expression, you will remain unusually irritable, or in an irritable mood, as we say, for some little time. So long as the mood persists, the impulse is, as it were, seeking an object, and is apt to fasten upon, and receive new stimulus from, objects which at other times would fail to excite the emotion; as when in an angry mood, your anger bursts forth afresh at the slightest obstruction of any action, a door-handle that sticks, a pen that splutters, a fly that distracts you from your book by tickling your nose or buzzing on the window-pane." [20]

The reflections in the last passage would seem to imply a resemblance between the mood and what we have earlier called the *appetite.* The mood as well as the appetite would be a sensitizer of the instinct. Mood and appetite, alike, would generate cognition of and search for an appropriate object; each one, respectively, would turn, then into emotion proper whereupon appetite — in a measure also mood — would prompt directed behavior whenever environmental conditions are favorable. The tendency of the mood to generate the imagination of its object — by which act it immediately turns into emotion — constitutes the very reason why I have attempted here to minimize somewhat its role as an independent affective act of experiencing.

This concludes the exposition of McDougall's doctrine of emotions. Important as it is, I have to criticise some of its features: firstly, McDougall's failure explicitly and precisely to consider affective experiencing one of the important sub-acts of conation; secondly, his conception of the enhancing and depressing effects of pleasure and pain respectively as psychological ultimates not referable to simpler terms and theory; thirdly, his regarding belief and doubt identical with intellectualized confidence and anxiety; and fourthly, the undue role he gives to moods, experiences which are rarely and then only transitorily encountered by man.

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[20] William McDougall, *Outline of Psychology,* p. 360.

CHAPTER IX

The Cognitive Sub-Act of Conation

We have argued the necessity of considering the experiencing of affect a transitive mental sub-act of conation. This would mean that the act has an object or content, or, rather, that it yields (creates) such, its content being denoted by some one or the other of the numerous terms symbolizing our affects. When examining the cognitive sub-act of conation, we find it less difficult to conceive of its transitive nature than in the case of the affective sub-act. For, everyone will agree that we think objects or contents, while everyone may not agree that we effect (or — as my favorite expression has it — we *emove*) emotions, feelings, and their blends. From our systematic standpoint, however, all the nouns that stand for affective *states* are actually the symbols of the objects or contents of the transitive act of emoving; that is to say, they are the objects yielded or brought into conscious being by that act. The cognitive sub-act of conation yields the cognitive contents. The affective as well as the cognitive objects might be coordinated or subsumed under the wider heading of mental contents; all mental contents, then, are yielded by mental acts of experiencing. The following appended diagram (Fig. 16) sets forth the basic view to which I confess.

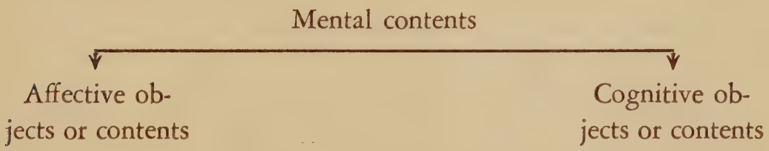

Fig. 16

Once, I tried to index in detail all mental contents; I thought it might be done in a manner homologous to the linguist's reference, of all words to a limited number of word-categories: nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions, and a few more. I was wrong. Though the affective contents can be roughly classified along the lines attempted by McDougall (cf. Chapter VIII), the same cannot be achieved with the cognitive mental or psychological objects. Any tentative dictionary of these would become much larger than Webster; this is largely because the majority of the cognitive psychological objects are relational contents, not envisaged in the linguist's epitome. How then, should we define a cognitive psychological object?

It has been the ambition of many philosophers to conceive of universal occurrence (becoming) as one single gigantic event in which all serves and is served by all. Be this unity of universal progress true or not, it seems indisputable that our primary or naive awareness of the world is not qualified by unbroken interpenetration. On the contrary, we apprehend the world in the terms of fairly independent things and occurrences (events in which things participate). The most essential sign of the thing is its relative stability while the quintessence of the event is its change. Philosophically, things and events are not dichotomies; I seem to remember a passage where Whitehead speaks of Cleopatra's Needle as an event or perhaps it was as a process — the difference not being very vital. The cognitive psychological objects all fulfill one broad criterion: a psychological object is always something — in fact, it is anything — that a human mind can think as a whole or as a unit. This makes the scope of cognizable psychological objects unfathomably wide, for, in its broadest sense it even includes the philosopher's dream of universal wholeness. Less dignified examples of psychological objects in this comprehensive sense would be: (A) concrete things — like the pen with which I write or the power-station that gives me light; (B) abstract things — like the honesty of Judge X or the philosophy of Spinoza; (C) concrete occurrences — like the falling of a stone or the war in China; and (D) abstract occurrences — like Newton's development of his binomial theorem or the intellectual give and take between Carlyle and Emerson. Heed should be taken also of the fact that, though affective contents yielded by the affective sub-act of conation, are experiences different from the objects yielded by cognition, whenever we retrospect upon them, they are no longer products of affective but of cognitive activity; our own affect becomes the content of our own thought. Indeed, the confusion of the two mental acts themselves, to which reference has been made earlier, has, no doubt, its *pros* in our competence of reflecting upon our own affects.

The vital difference between cognition, on the one hand, and affection, on the other, lies in the contents of the former being structured, the ones of the latter, not. You can draw a picture of your thoughts, viz., your house, your imagined friend, your insight into means-ends relations, even your reasoning; but you cannot draw a picture of your anger or of your love. Indirectly, only, can you depict affects, but the affects you depict are then cognitive objects, not true affective objects. For instance, it is possible to reify love by representing Romeo at the feet of Juliet, each devouring the other with the beatified eyes of fervent devotion; but, in that case, passion *per se,* as an affective experience, is not directly described. If there be any structure of affective contents at all, it would be a vague temporal structure: a rhythm. No affect has a continual temporal evenness — it shows a waxing and waning in intensity, which might be considered a very primitive temporal structure. Grief cannot persist without such pangs, neither can joy nor anger, nor fear nor hunger.

Civilized languages have terms to denote a variety of cognitive sub-acts of conation; on page 236, a diagram of the most important ones is submitted (Fig. 17)]. *To perceive* is one of

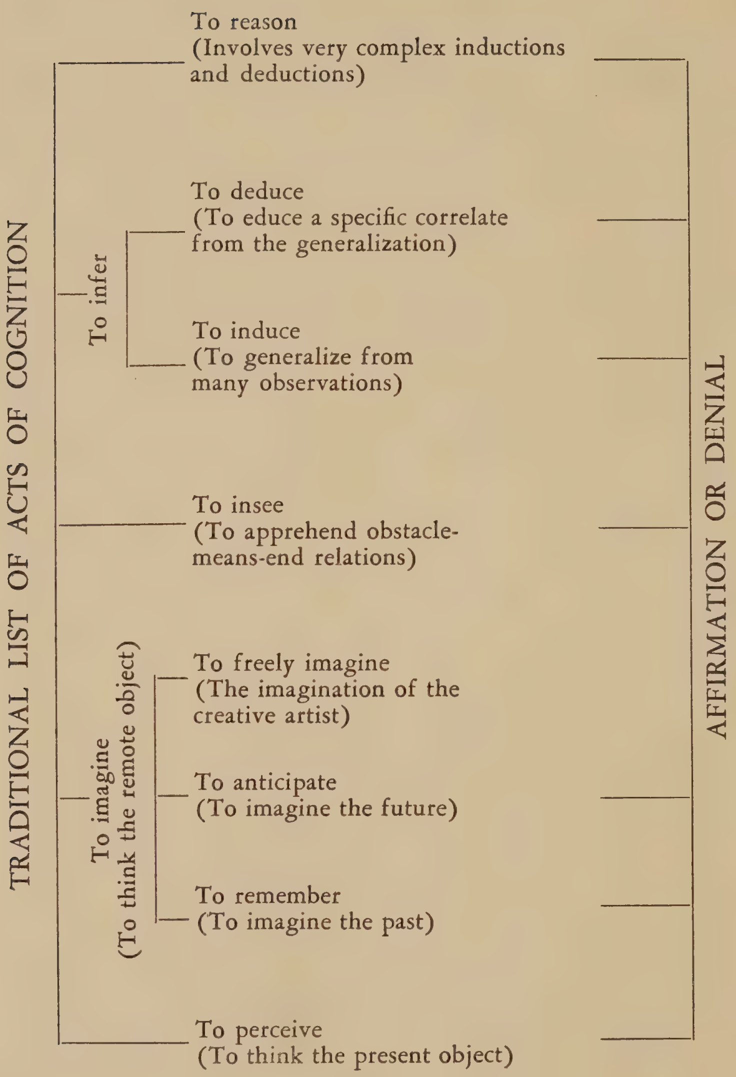
TRADITIONAL LIST OF ACTS OF COGNITION
To reason
(Involves very complex inductions and deductions)
To infer
To deduce
(To educe a specific correlate from the generalization)
To induce
(To generalize from many observations)
To insee
(To apprehend obstacle-means-end relations)
To imagine
(To think the remote object)
To freely imagine
(The imagination of the creative artist)
To anticipate
(To imagine the future)
To remember
(To imagine the past)
To perceive
(To think the present object)
AFFIRMATION OR DENIAL

Fig. 17

these. It means to think a present object, present in the sense that its physical counterpart excites receptor organs of our body; the most important perceptual fields in man, of course, are the field of vision and the field of audition. In other living beings that need not be the case. Our dog recognizes us by odor rather than by sight. In the following discussion — at least to begin with — we need only to consider these two perceptual fields. Objects perceived are probably basic for all higher thought relations. It would be trivial to quote a well-known Latin phrase to that effect. *To imagine* is another cognitive act; to imagine means to think the remote object, that is to say, the object which is not present in the sense that it excites receptors. There are three kinds of acts of imagining: (1) imagining the past or *remembering,* (2) *imagining* the future or *anticipating,* and (3) *free constructive imagining,* which is the imagining on the part of the artist who freely combines events which have never taken place and most likely never will take place. It is probable that anticipation is the more primitive act of imagining. I have even suggested that a simple instinct at work generates the imagination of the ego-object relation to satisfy a need even when a perceptual situation is not present (the case of sheer appetite). *To insee* is a verb that I have constructed from the noun *insight;* it denotes a special cognitive act, namely, the one of apprehending obstacle-means-end-relations. The concept of insight has become very prominent in animal psychology ever since it was observed by Köhler that the chimpanzee is capable of spontaneous apprehension of these relations. His work, *The Mentality of Apes,* in which his observations were described, constitutes a very noteworthy contribution to the psychology of the primates. Prior to the recently established meaning of the term *insight,* the term had, and still has, a very precise connotation in the profession of psychiatry. It refers to the regaining of realization of having been ill on the part of mental patients after their recovery. Many patients never attain that realization, while others do; it is quite common, though by no means the rule, that a young patient having suffered from an attack of manic-depressive excitement fails after recovery to obtain insight as to his past diseased condition. After manic-depressive depressions the regaining of insight seems to be the rule; the lacking insight on the part of certain manic cases is apparently not due to amnesia. *To infer* is a cognitive act; it has two phases; *to induce* and *to deduce.* The former refers to the act of generalizing from many specific observations; oftentimes, valid induction leads to valid hypotheses (law). Deduction means to infer from the general law a specific thing or event. For instance, all mammals are said to be identifiable by the shape of their teeth and of their extremities. That is a generalization arrived at by induction. Assume now that, on some occasion, an animal is encountered that is not immediately recognized; by examination of its teeth and its extremities might, from the general law, be deduced its species. One of the keenest applications in science of inductive-deductive method, no doubt, was the design by means of which the Swedish botanist, Carl von Linné, could identify and classify every Scandinavian plant. *To reason* is considered the highest of all the cognitive acts. In essence, it does not differ from the act of inferring; it is only more complex, involving a large number of interwoven acts of induction and of deduction. Where, on our scale, should we place the act of *intuition* and the act of *extra-sensory perception.* This depends entirely upon our hypotheses concerning these acts. There are many interpretations of the act of intuition. Personally I have accepted McDougall's view, namely that intuition is an act of implicit reasoning in which, as it were, suddenly the concluding term comes to the mind while the links of inference through which it is reached are not explicit. If that interpretation is correct, I would place the act of intuition in a position of proximity to the act of reasoning. As to extra-sensory perception, I have myself expressed the view that it might be an atavistic kind of knowing, a remainder of an evolutionary state before a nervous system had evolved but when, despite this lack, the living being, like the amoeba, displays a directed behavior which is seemingly guided by some distance perception. In case my supposition be true, I would naturally place extra-sensory perception to the left of the act of perceiving on an extended scale.

In animal experimental psychology, much veneer has been made of the acts of perceiving differences and similarities between things. Judging from their behavior in the laboratory many animals seem capable of both. It would seem even as if some animals were capable of apprehending the similarity of a relation where the relata differ. It is particularly the Gestalt psychologists who have demonstrated the latter rather remarkable feat. In human psychology the two cognitive acts might be called discrimination and apperception or, better, apperceptive synthesis. The latter which is a very important cognitive act shall be more fully sounded later. Neither of the two acts can be properly introduced in our diagram for each one of them might play a role on any level of our scale between the left and the right extreme.

The acts of *affirming* and of *denying* the realness of a psychological object would seem itself offhand to be a cognitive act. Since, however, some form of affirmation seems to enter into anyone of the cognitive acts of our diagram, it can be introduced only through a base line with pointers to the different separate acts. Normally, we affirm the reality of the objects we perceive. Our memories are affirmed as realities of the past, our anticipations as realities of the future. Insight unquestionably involves affirmation. In inference and reasoning, as a rule, we affirm the reality of the concluding term. There are only a few cognitive acts, in which, as it were, reality-concern does not seem to enter in any appreciable measure; that would be the case, for instance, in the free artistic imagination and possibly also in the highest mathematical reasoning. These exceptions from our general rule shall be examined in detail in a later connection.

We shall now consider a feature of cognitive contents which I discuss only with the utmost hesitation because, while it might be very important psychologically, its scanning involves elusive subtleties. I refer to the precise nature of the structuring of the cognitive objects or contents. I have mentioned that the contents of the affective sub-act of conation lack structure except that they might present a temporal waxing and waning in intensity, a very elementary rhythm. Contrary to the affective objects, the cognitive objects present extremely complex structuralization.

First, we should note that, as we pass along our scale from the left to the right, the cognitive acts become increasingly verbalized; in other words, we progress from image-thinking toward word-thinking. This statement, by no means, is intended to indicate any dichotomy of mutual exclusion, for even the simplest image, like the image of a house, has its own word-symbols: the word *house,* or the word *edifice,* or the word *building;* on the other hand, it is evident that complex reasoning progresses in the terms of words: generic words, and relational words, rather, than in the terms of primordial imagery. Next, we should note that every visual content yielded whether by the act of perceiving or by the act of imagining, has a spatial structure; while every articulated auditory content like a perceived or imagined phrase or melody, has a temporal structure. Since the words in the terms of which we thing might be either written (printed) or spoken, the words, *qua words,* have a spatial as well as a temporal structure. What is the relation between these structures and between them and the meaning they convey. Let us examine the attached figure (Fig. 18).

The figure contains four visible units of spatial structures; each more or less unlike the rest; (1) the simple outline drawing of a building, (2) the word: *edifice,* (3) the word: *dactylus,* and (4) a symbol used in poetics to denote a triad of syllables the first of which is strongly accentuated, the latter two less accentuated. The straight line stands for the strongly inflected syllable, the two little curves respectively for the less inflected ones.

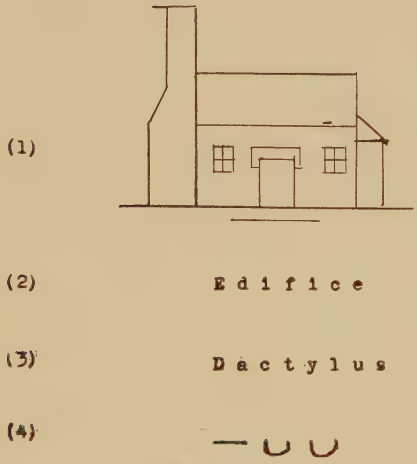

Fig. 18

In this figure, let the little top picture (1) stand for an actually perceived edifice. It would express, then, everything that can be expressed in the visible facade of that particular edifice: its wall, its chimney, its roof, its door of entrance or exit, its windows, and its tool-shed. This all constitutes the concrete meaning of the perceived edifice. Enriched by acts of imagining, it might suggest part of its interior: the front-hall, the bedroom in the back, and so forth. This picture (1) standing for the perceptual or for the perceptual-imaginary character of the edifice has a strictly defined spatial structure. Due to the limitation of the two-dimensional paper surface, it is inadequate, but we have to disregard that fact. Below the little picture of the house is written in type the word: *Edifice* (2). That word is the language symbol — or one of the language symbols — of the picture above; but, while the latter gives a specific characterization of the edifice in question, the former, the word edifice, does not. The word edifice *qua* word might refer to Palazzo Pitti or to that abomination which was once the Imperial Palace at Berlin; it might also refer to the log-cabin in the state of Kentucky in which one of our greatest sons was born. To state the matter differently, the word edifice is a generic word symbolizing cognitive contents of a certain type; it does not imply the individual intimacy of the chimney or of the tool-shed of the little picture (1). Let us now heed that the word edifice (2) might be printed, typewritten or handwritten in a thousand different fashions; despite this, its intimacy in describing a specific thing would not improve. The word edifice, then, might have a very large number of spatial structures, but, no flight of imagination nor act of apperceptive synthesis would make one apprehend any spatial similarity in the structure of the word — no matter how presented — with the little cabin (1) above the word. Yet, the word edifice in a general way stands for that which the picture actually represents. Let us now note another interesting fact: the word edifice is not only a word visible on a sheet of paper, it is also a spoken and a heard word; or it might be an auditorily imagined word. In any of these forms, it has a temporal structure and its temporal structure happens to be that of the so-called dactylus; that is to say, it has one emphasized first syllable followed by two less accentuated syllables. This temporal structure of the spoken or heard word is something entirely different, on the one hand, from the spatial structure (2) of the word and, on the other hand, from the spatial structure of the perceptually apprehended image picture (1). The word edifice can be enunciated in large variety of pitches of voice, but as long as its temporal structure remains that of the dactylus the enunciated word will be meaningful. Man has invented a spatial symbol (4) for the temporal structure of the dactylus: a line and two little curves. As a spatial structure this symbol does not resemble the spatial structure of the word edifice (2); neither does it as spatial structure resemble the printed word dactylus (3); and, of course, it does not resemble the perceptual or imaginary image of the picture (1), the original edifice. The spatial symbol (4) of the temporal structure of the word edifice (2) is not only a symbol applying to that word but also to all auditory words having the temporary structure of the dactylus. It happens that the temporal structure of the spoken word dactylus is itself a dactylus. This, however, does not bring about a similarity in the spatial structures of the written word dactylus, whether with the written word edifice or with the symbol of poetics for the dactylus.

Let us now consider another figure (Fig. 19). It contains a drawing of a young girl (1) — we shall call her Miss X — and a typed statement concerning her formulated in four different

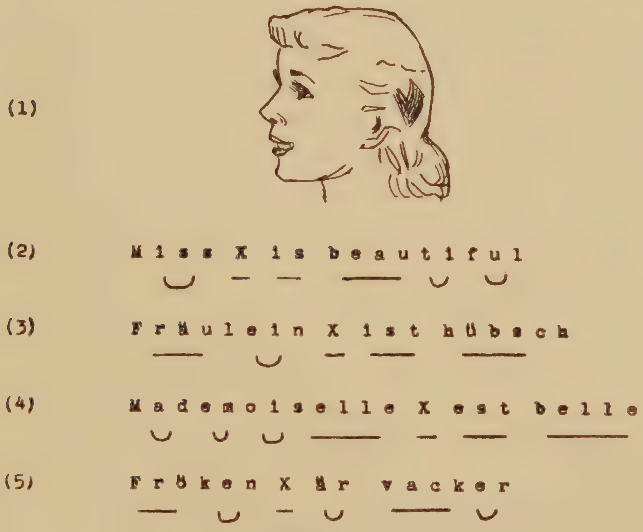

Fig. 19

languages [(2)—(5)]: Miss X is beautiful (2); Fräulein X ist hübsch (3); Mademoiselle X est belle (4); and, Fröken X är vacker (5). The four languages respectively are English, German, French, and Swedish. Let us assume that in the figure, the little top picture (1) stands for Miss X as — in the profile vista — she is actually perceived or imagined. It would, then, in the present instance, take the place of the little house in the previous figure (Fig. 18). Her picture would imply her hair, the curvature of her profile, her eyes, her lips, etc., just as in the earlier instance the picture of the house implied its wall, its roof, its chimney, its tool-shed, its door, its windows, and so forth.

The four formulations of our assertion [(2)—(5)], each one made in a different language, have all the same meaning; they state about a certain individual, Miss X, that she is beautiful. That statement, however, is a general one. It does not indicate in detail the features of Miss X's beauty, the curve of her profile, the color of her hair, etc. Though it refers to Miss X, it is nevertheless generic in that it contains merely the generic term for beauty. Like the term edifice, in our earlier instance, did not indicate the intimate nature of the portrayed edifice, our statement does not indicate the intimate nature of Miss X's beauty.

The general identity in meaning of the four formulations [(2)—(5)] does not cover all aspects of their similarity; they have also a common *syntactical structure*. Each formulation consists of a *subject* (a noun or its equivalent), of a *predicate* (a verb), and of a *predicate completion* (an adverb or other adjunct of the verb). This similarity is one in the structure of word-thinking; it is different from the similarity of meaning. Any one intransitive statement — whether or not referring to Miss X and her beauty — would have the same basic syntactical structure; it would consist of a subject, of a predicate, and of a predicate-completion. Other statements, the transitive ones, would differ from the intransitive statements in the respect that, while — like the latter — they would still contain a subject and a predicate, unlike them, they would contain, instead of a predicate-completion, an *object* (another noun or its equivalent). All transitive statements have in common that type of structure. Syntactical structure, then, we might consider a structure of a generic kind of certain complex cognitive contents. Syntactical structure, whether of the intransitive or of the transitive type, might be greatly complicated by clauses and appositions, or what not; nevertheless, its basic core remains as above stated.

It would seem evident that the syntactical structure of our four formulations could not ever be identical with their respective spatial structures; for, in all instances, the spatial structures differ, the syntactical structure remaining constant. Furthermore, the spatial structures of any one of the four formulations could be modified in a number of ways by the use of different typings. But, no such modification would ever effect equality between these structures, or between any one of them and the common syntactical structure. Incidentally, as spatial structures, no one of the four formulations [(2)—(5)] has the slightest resemblance with the spatial structure of the original picture of Miss X (1), nor could it possibly be moulded into such a resemblance.

Each of the four formulations, in so far as it is an array of spoken and heard words, has a temporal structure which is also different (a) from the meaning of the sentence, (b) from its syntactical structure, and (c) of course, from its spatial structure — *per se,* the latter is timeless. This mutual independence of the structures is again emphasized by the fact that the four formulations have entirely different temporal structures. I have attempted to indicate the temporal structure of each one of them by the use of the symbols from poetics (Fig. 18). Any one of the temporal structures, of course, could be sounded in a variety of speeds and pitches of voice, but, no such variation could ever introduce a mutual equality between the temporal structures, or, between any one of these and any other structure of the formulations, viz., the syntactical structure, on the one hand, and the varieties of spatial structure, on the other. The upshot of our reflections would seem to be that we have to acknowledge a type of structure of cognitive contents, the syntactical structure, which is independent of the spatial as well as of the temporal structures of the formulated content, and which in its abstraction is aloof of the concrete or individual meaning of thought.

Are there independent structures of thought contents beyond the ones so far discussed? I believe so. Consider the next attached figure (Fig. 20).

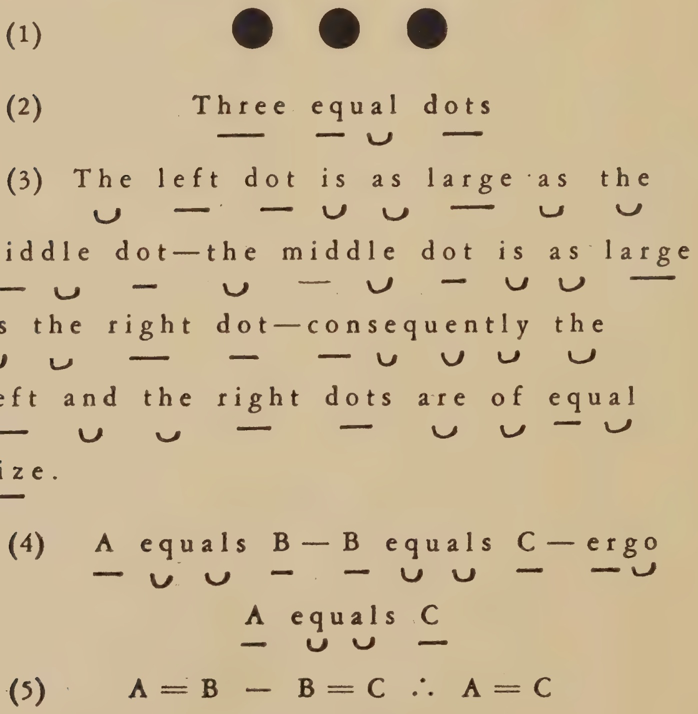
(1)
(2) Three equal dots
(3) The left dot is as large as the middle dot—the middle dot is as large as the right dot—consequently the left and the right dots are of equal size.
(4) A equals B—B equals C—ergo A equals C
(5) A = B — B = C ∴ A = C

Fig. 20

In this figure, we have on the first level (1) the perceptual representation of three equal dots. These occupy the same position as did the picture of the house and the one of the girl, Miss X, in the preceding figures. Below the dots (2) we have the generic verbal symbol of these, notably: *three equal dots.* That verbal symbol has its unique spatial structure which in no way resembles the one of the three dots. The words have also their unique temporal structure as indicated in the terms of the symbols borrowed from poetics. That structure has little in common with the spatial structure of the words and if possible even less in common with the structure of the spatially perceived dots. Below (2) is a derived supposition, derived from the statement of fact: *three equal dots.* It reads (3): The left dot is as large as the middle dot; the middle dot is as large as the right dot; consequently, the left and the right dot are of equal size. The assertion (3) is a thought content which has a logical structure. As all written words, it has a spatial structure, as all spoken words it has a temporal structure, but its logical structure can not be identified with any of these. For, exactly the same logical structure can be stated in general terms, namely, (4) A equals B; B equals C; ergo A equals C. As spatial and temporal structures of the written and of the spoken word respectively that formulation has no resemblance with the earlier one; neither does it resemble the basic perceptual picture (1) nor the verbal symbol of the latter (2): three equal dots. Nevertheless, it expresses, in the general, exactly the same logical relation as the one, that (3) expresses in the specific. Its temporal structure can be maintained while its spatial structure is changed into the proper mathematical symbols as in (5): A=B; B=C; ∴ A=C. That same logical formulation has a different spatial structure from the earlier one though its temporal structure is unchanged. All our five propositions including the perception of the three dots imply exactly the same logically. In other words, despite all the differences in spatial and temporal structures the logical structure remains the same, and is, we believe, accordingly, an independent variable in the structure of cognitive contents.

All the three formulations (3), (4), and (5), in addition to having a logical structure, have also a syntactical structure. Each one of them consists of three coordinated intransitive statements of fact: (1) A equals B; (2) B equals C; and (3) A equals C. Each one of these three coordinated intransitive statements of fact, consists of a subject, a predicate, and a predicate-completion; in statement (1) the subject is A, in statement (2) it is B, and in statement (3) it is again A; the predicate in all instances is the same, namely, *to equal,* or rather *to be equal with;* in statement (1) the predicate-completion is B, in statement (2) it is C, and in statement (3) it is again C. Despite the differences in the three statements indicated above, the statements have a common syntactical structure which we might call (S-P-C); these capital letters standing respectively for subject, predicate and predicate-completion. The question now arises: Is logical structure and syntactical structure the same or are the independent variables of thought structuralization? This is a very subtle question. I shall suggest the answer by the following consideration. Let us compare two verbal formulations, one of which is the one we have already considered, the other a partly new formulation.

(1) A equals B — B equals C — A equals C
(2) A equals B — B equals C — C equals D

The difference between these formulations lies in their third terms; in case (1), the third term reads: A equals C; in case (2) the third term reads: C equals D. Despite that difference the two formulations are identical as to their syntactical structure; the first as well as the second contain each three statements which syntactically are of the form (S-P-C), that is to say consist of subject, predicate, and predicate-completion. The syntactical identity of the formulation does not seem to rule out the fact that formulation (1) possesses a logical structure, while formulation (2) does not. In the former formulation we find what Köhler, in the language of his pure phenomenology would call phenomenal *requiredness;* the first two terms require the third, and the third term fits the first two. This is not the case in the second formulation. The statements: A equals B, and B equals C, do by no means call for the third statement: C equals D. In the language of conational psychology I would express the difference between the two formulations as follows. In the first formulation you can place the mathematical *ergo* between the second and third term, in the second formulation you cannot do the same. The mathematical *ergo* implies two things: (a) the third term is yielded in an act of inference, more especially an act of deduction, the deduction of a special case from the general law that all things equal to one and the same thing are mutually equal; (b) to the third term attaches the affirmation of reality. The second formulation as compared with the first seems to be ontologically indifferent; it is, as it were, apprehended without reality-concern: we neither affirm, nor deny it; nor do we doubt. I have submitted these reflections in support of the view that the logical and the syntactical structures of cognitive contents are independent variables.

An incidental reflection: Suppose you consider the letters A, B, and C, to stand for the three perceived dots, respectively for the left, for the middle, and for the right one, you might hesitate to make the statement A equals B, B equals C, A equals C. Your hesitation arises from your uncertainty whether they actually are three *equal* dots. You can then perfectly well make a suppositional proposition concerning them, namely, if A equals B and if B equals C, then A equals C. Such a suppositional formulation of the relation between the three dots is faultless in its logical structure whether or not fine measurements of the dots should show that the dots are not exactly equal. In such a formulation you still make your deduction from the general law that all things equal to one and the same thing are mutually equal. The suppositional proposition would save your face no matter where empirical observation might lead you. In a way, there seems to obtain a supremacy of universal truth.

We have been examining four basic kinds of structure of cognitive contents, namely, the spatial, the temporal, the syntactical, and the logical structure. Apparently, these are independent variables. They exhaust by no means the topic of the structure of thought contents; in poetic and in musical cognition, appear superstructures of very intricate complexity, so intricate that their exhaustive analysis actually constitutes two separate branches of science, *poetics* and *harmony* respectively. A few of these aesthetic superstructures shall be described later.

I propose, now, to approach the general problem of cognition from a new angle. I believe, it might be fairly said that any act of cognition is an act of relating to one another certain relata; that supposition would in no way be incommensurate with our reflections upon the structure of cognitive contents. It might also be fairly asserted that, depending on the nature of the relata and upon the manner in which they are related, complex cognitive contents become meaningful. In view of the vastness of cognitive contents, that is to say, of things or events that can be thought as units or wholes, is it possible to make any generalization concerning these, more especially, concerning the kinds of interrelations into which they might enter? I believe that a few sweeping generalizations can be achieved.

I suggest that all cognitive objects or contents are apprehended in one or the other of four different ways, namely: (a) as end or goal, (b) as obstacle toward goal-attainment, (c) as means to goal-attainment, and (d) as aesthetic-logical object. This generalization, though seemingly sweeping, approximates, I believe, an exhaustive statement. Only a few artifacts of cognition elude it. It should be understood, however, that, on different occasions, one and the same cognitive content might be apprehended in any one of the different manners. For instance, suppose all members of my intimate social group, including myself, walk with canes. Suppose, then, that, by accident, my own cane is broken. The possession of a new cane immediately becomes the goal of a desire on my part; that desire, it is true, ultimately springs from some high sentiment of group-loyalty — nevertheless, it is the cane that I want and, having acquired it, I enjoy the satisfaction of successful goal-attainment. On one occasion, I am attacked by a mad dog; my cane becomes to me a means of self-defense, and I use it in order to ward off the animal. On another occasion, I have to escape a danger situation through violent running. In that case, my cane is apprehended as an obstruction of my free locomotion (an obstacle toward goal-attainment), and I throw it away. Suppose, again, that my cane is a work of excellent craftsmanship, an eighteenth century cane such as was used by the French nobility at the time of the regency; the cane might then become to me an object of aesthetic contemplation.

Take, as another instance, a far more complex cognitive object than my cane: Spinoza's philosophy. To one scholar, the perusal of that philosophy might be the very goal of a spontaneous ambition. He might consider the complete and detailed understanding of it the very climax of the scholarship he pursues. In such a case, one could perhaps say that the philosophy of Spinoza is a goal. Other scholars might read with gusto all philosophies giving preference to these in which the logical argumentation shows the highest degree of perfection and beauty. To such a scholar the philosophy of Spinoza would be essentially an aesthetic-logical cognitive content. Let us now suppose that a graduate student at some university happens to have as his major tutor a Spinoza specialist. To that student the philosophy of Spinoza may be nothing but a means to the attainment of an A-grade in the final doctoral test. Suppose, then, that the thought of Spinoza is difficult for him to reap, alas, that philosophy becomes apprehended as an obstacle to his goal-attainment, the grade of excellence.

The four ways in which all cognitive contents are apprehended, that is to say, their apprehension as goals, as obstacles, as means and as aesthetic-logical objects, by abstraction can be reduced to three main modes of apprehension.

(A) The apprehension of cognitive objects in centripetal relation or in relation to one's self. Such would be the apprehension of goals.

(B) The apprehension of cognitive object in centrifugal-centripetal relation, that is, in relation both to one another and to the self. Such would be the apprehension of obstacles, means and goals to one another, on the one hand, and to the self, on the other.

(C) The apprehension of cognitive objects in centrifugal relation or in relation to one another and to the universe at large. Such, as we shall see, would be the apprehension of aesthetic-logical objects.

The first mode of apprehension (A) might be called the *subjective mode,* the second (B) the *subjective-objective mode,* and the third (C) the *objective* or the *impersonal mode.* This sweeping generalization, as we note, is based upon the fundamental supposition that all acts of cognition consist in the relating to one another of relata.

By further abstraction the three modes of cognition may be reduced to two: (a) *practical cognition* and (b) *artificial cognition.* The former — broadly speaking — corresponds with the subjective and with the subjective-objective modes of apprehension, (A) and (B), the latter with the objective or impersonal mode of apprehension (C). As no cognition occurs unless prompted by some interest or conation, we may make a provisional distinction between *practical* and *artificial* conation. The term artificial, used here to qualify both cognition and conation, may perhaps be criticized particularly in view of the fact the dichotomy of practical and *theoretical* thought is the common dichotomy. Since, however, the term artificial is not meant to imply theoretical, it could not be replaced by the latter term. That state of affairs shall become fully evident before long. The levels of abstraction through which we arrived at the concept of practical versus artificial conation are diagrammatically outlined on page 254 (Fig. 21).

Practical conation is always adaptive, artificial conation is not; accordingly, practical cognition, being a sub-act of practical conation, subserves adaptation, while artificial cognition does not subserve adaptation. Since all acts of cognition are acts of relating to one another relata, the difference between practical and artificial cognition will naturally express itself, on the one hand, in the difference between the relata selected, and, on the other hand, in the difference between the ways in which these are related to one another. In practical cognition there is a *purposive selection* of relata all of which ultimately have a reference (relation) to a goal or end. In artificial cognition, the selection and relating of relata is not purposive with an end in view; it is, rather, what might be called *dissociative-associative.* There is one species of cognition that is not strictly aesthetic-logical and which, nevertheless, is artificial: thus, it lends itself particularly well to the comparative analysis of practical versus artificial cognition. It is the cognition achieved by the subjects in some of the classical laboratory experiments undertaken, in the latter part of the past century, by the great pioneers in scientific psychology, by men like Wundt, Ebbinghaus, Müller, Lehmann, and others. These experimenters pretended to explore simple cognitive acts such as sensing, perceiving, remembering, etc., and to formulate the general laws of such mental processes. I shall endeavor to show that they did not establish valid general laws, the reason of their shortcoming being that the current laboratory settings brought forth acts of artificial rather than of practical cognition. The demonstration will bring into salience the precise

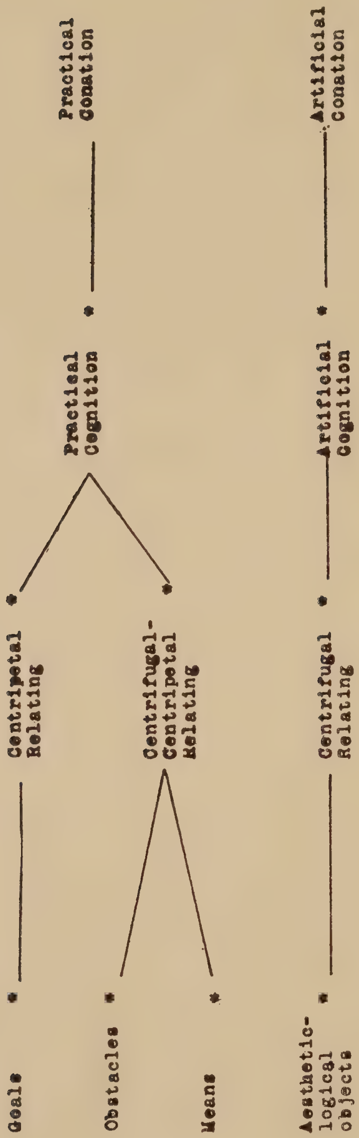
Goals
Obstacles
Means
Aesthetic-logical objects
Centripetal Relating
Centrifugal-Centripetal Relating
Centrifugal Relating
Practical Cognition
Artificial Cognition
Practical Conation
Artificial Conation

Fig. 21

difference between the two modes of relating relata (the dissociative-associative and the purposive) that are peculiar, respectively, of artificial and of practical cognition.

Typical of all artificial cognition seems to be the fact that it is essentially contemplative; by this I mean that the cognitive act of relating relata, as it were, has become an end in itself — it no longer serves practical purposes, it no longer guides adaptive conduct. It is essentially an impersonal centrifugal relating of objects to one another [apprehension mode (C)]. If the self enters into any relation apprehended in artificial cognition, it enters, not as a subjective desiring self, but as an object among objects, as when, for instance, I say: "Before me was a jagged rock-formation." Here, the object "rock-formation" is related to myself exactly as two indifferent spatial objects might be related to one another. In the classical laboratory experiments, the psychological self — in so far as it occupies any position at all — occupies that indifferent position.

One of the least complicated of all acts of relating relata is the one underlying the perception of a simple figure on a ground, or, as we might call it, the perception of a simple *unlike*. In the laboratory, in order to produce such a simple experience, the experimenter might use a photometer of the type where, for the sake of measuring light radiation, one observes the brightness of an inner disc as compared with a larger concentric field or rim. To begin with, he might adjust the brightness so that no difference between the two areas is noticeable. After having instructed the subject to give a signal as soon as he sees the inner disc, he gradually increases the difference between the two brightnesses. At the moment, the subject just barely becomes aware of the disc and signals to that effect, he (the subject) relates in the most simple manner something to something else that is different; that very act is the prototype of dissociative or discriminative selection by cognition. Even in the simple case described, the experience is not of *one* object only, the disc; it is, rather, the experience of a simple relation, the relation of the disc to its surrounding rim or ground. This experiment used to be called an experiment on sensory or on perceptual thresholds.

In practical life, we perceive unlikes; these, however, are meaningful perceived objects which we single out from their surrounding exactly because of their meaning. As we shall note throughout the examination of practical cognition, all objects perceived, all contents apprehended, are selected and referred to an ultimate end or aim by practical conation, attaining their meaning by their position in the conative cycle in progress. This is precisely what is implied in our assertion that — contrary to the case in artificial cognition where the acts of selecting and of relating relata are dissociative-associative — in practical cognition, all selecting and all relating are purposive.

The most primitive apprehension of all is the one of the ego-object relation which is believed, if realized, to satisfy the need of a primordial instinctive desire. Incidentally, the only workable conception of the goal of an adaptive impulse is that the realization of the ego-object relation, which is to satisfy it, constitutes that goal. In McDougall's psychology, some confusion enters by the fact that the object of the instinct seems to be identified with the object or situation which evokes or activates the latter. The difficulty of that supposition becomes evident, when we examine, for instance, the instinct of escape. What activates the instinct is a danger situation. The goal of the instinct is certainly not the danger situation but, rather, the shelter, a cognitive content entirely different from the danger situation. If, however, here as everywhere, we agree that the goal of any one's impulse is always the establishment of a relation between the environment and the self that is adaptively expedient, all confusion disappears. Such a relation, henceforth, we shall consistently designate as the *(EO)-relation-to-satisfy a need,* or — for the sake of brevity — merely as the *(EO)-relation.*

The apprehension of the (EO)-relation is primarily an act of imagination prompted by conation; as the conation unfolds itself — in so far as the pregnant physical situation is present in the sense of affecting receptor organs of the nervous system — we come to perceive various objects related to the conative endeavor in progress. Food, for instance, thus becomes perceived as the object of the (EO)-relation-to-satisfy hunger, the shelter as the object of the (EO)-relation-to-remove fear, the individual of the opposite sex as the object of the (EO)-relation-to-satisfy lust, and so forth. These constituent psychological objects are naively apprehended as the goal-objects of desire. Strictly and systematically speaking, however, the realization of the (EO)-relation always remains the ultimate goal of any impulsion.

Nearly as simple as the apprehension of the object most closely associated with the (EO)-relation, is the simple perceptual insight into obstacle-means-end-relations. It is readily seen that in that simple insight, the cognitive act relates present with past and with future, and past with future; in other words, perception as well as memory and anticipatory imagination enter into the act. Though less obviously, the same is the case in the simple perception of the object of the (EO)-relation, for in the practical adaptive attitude, the primary object perceived is one which, on the ground of past experience, individual or racial (archetypal), is anticipated to satisfy, if brought into a certain relation to the self, the need of the present.

The cognition of the (EO)-relation has been described earlier as one of the three sub-acts of any impulse or mode of conation at work. As far as it is explicitly known to the thinking subject, it is an act of centripetally relating to the self an object outside the self. In case there is any meaning to the concept of instinct and in case we repudiate the view that instinctive activity is blind, then, our position would inevitably incorporate the assumption that this simple mode of cognition is a component part of the instinctive act and that the apprehension of the (EO)-relation-to-satisfy an instinctive need is founded in racial memory.

Simple, spontaneous acts of relating means to obstacles to ends (simple insight) have been observed in the higher animals. For instance, a chimpanzee, we are told, uses a bamboo stick in order to secure a banana that is out of his reach. The act is said to be spontaneous, that is to say, it is independent either of the drill of a trainer or of past observation of the bamboo stick being used as an auxiliary in the securing of distant or barred objects.[1]

It would seem evident that even in the simplest insight there is inherent an act of relating something that is perceptually present with the future; an act, in the case of the chimpanzee, of relating the presently perceived bamboo stick and the presently perceived banana to the anticipated goal-attainment. This future reference of all insight, is that upon which McDougall insists when he emphatically asserts that all *insight,* even the simplest one, is always *foresight.*[2]

In spontaneous (unlearned) insight, there is as yet no relating of present with individual past or of individual past with future. This, however, by no means, rules out the possibility that spontaneous insight, like the instinctive recognition of the (EO)-relation-to-satisfy a need, may be founded upon phylogenetic mnemic structure, upon some archetypal idea-form having originated in the racial past of the species. The interrelating of present with future and with individual past becomes characteristic of all guidance by memory. In animals as well as in man it results from learning.

We shall now consider a simple experiment on recognition. This is an experiment involving the act of relating present with past. Take a set of ten cards of ten different shades of grey, forming a series from the lightest to the darkest. Show one of them to your subject. Then shuffle all the cards and ask him to pick out the one that has been shown. In this experiment one of the relata is discernibly present, the other merely remembered. It is an experiment on simple recognition or on the reproduction by similarity. Unlike the previously described experiment on perceptual threshold which involved only an act of relating the present with the present this experiment involves the relating of present with past. Also, unlike the former experiment which was merely discriminatively selective, this experiment involves association as well as discrimination.

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[1] Wolfgang Köhler, *The Mentality of Apes,* London: Kegan, Paul, 1924.

[2] William McDougall, *The Energies of Men,* Ch. XXIII.

For practical purposes, the distinction between perception and recognition is negligible. Pure perception would occur only in the first (the archetypal) insight into the (EO)-relation, and in the first (the archetypal) insight into means-obstacle-end relations. As soon as, respectively, means, obstacles, and goals become qualified by individual past experience, the perception of them changes into acts of recognition, or as some writers have it, apperception. Acts of recognition as well as the relata organized in recognition are selected by practical desire; they attain their meaning or significance by their position in the conative cycle.

Freud has pointed out, that, many times, false perception and false recognition as well as failure to perceive or to recognize are determined by a desire of which — at the time of the error or the negligence — the person is unaware. The indirect implication of his proposal would seem to be that conation determines perception and recognition.[3] Only two instances are submitted in illustration of Freud's apparently quite convincing claim. These are both reported by Ernest Jones.

"I was searching the literature to find the earliest instances of a certain superstitious act, and, although I had only been able to trace it to the ninth century, I suspected that it might have occurred still earlier. One day I found in an old French book an account of it quoted from an earlier writer, the reference to whose work contained the word '6^{e} livre'. I read it as '6^{e} siècle', and entered it in my notes as such; it was only some time after, on making further investigation, that I discovered the error."[4]

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[3] Sigmund Freud, *Psychopathology of Everyday Life,* 14th Imp., London: Fisher, Unwin, 1928, pp. 115-131.

The following is an example of a conationally determined failure to perceive, more especially of a failure to perceive caused by the apprehension on the part of the reporter that disaster might have befallen to a dear friend: ". . . just when a relative was crossing the Atlantic last year, I saw in the news-headings that a serious accident had happened to a liner, but I had the greatest difficulty in finding the account of it in the paper, overlooking it again and again."[5]

I have myself reported a "Freudian error" which is interesting because it involves no less than five people and also because of the fact that the common conative attitude on the part of them all arose from the international political situation in the year 1936. The error committed by three of the persons concerned was a failure to perceive.[6]

Let us now again consider a simple laboratory experiment. Take a set of fifty cards of ten different shades of grey, forming a series from the lightest to the darkest. Five cards of each shade constitute the total fifty. After having shufflled the cards, ask your subject to arrange them in ten piles of equal greys. This task embodies not only a relating (separation) of dissimilars as in the simple figure-ground case (dissociative selection), but also a relating (coordination) of similar with similar (associative selection).

In practical life, we perceive and recognize not only meaningful unlikes but meaningful likes as well. But the likes we relate to one another are not coordinated because of any superficial resemblance in appearance (as in simple associative selection), but, rather, because of their resemblance as constituents in a conative cycle. Thus, for instance, we coordinate as *edibles* a large number of objects which look very different but which, nevertheless, are similar in the respect of being the goal-objects of one and the same desire, the desire for food. Or, we coordinate as classes of things — *lovables, virtues,* and *vices* — because the various members of each of these categories stand in a similar relation to great sentiments; the tender sentiment, and the two moral sentiments, love of virtue and hatred of vice, respectively. In the same way we coordinate as similars certain means objects, like a gun and a sword. Indeed, that is not because of a similarity in appearance, but because of a similarity in respect of being auxiliary to one and the same purpose, the purpose of self-protection. We notice in these illustrations that conation again, rather than the superficial resemblance in appearance, guides the act of coordinating objects as similar. No practical endeavor would ever prompt a man to relate to one another as a class of things all grey objects in the world. The recognition of similarity between means is the basis of all substitution of means. This, in turn, is the essence of all practical invention, practical invention progressing through the substitution of means by increasingly efficient means.

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[4] Ernest Jones, *Papers on Psycho-Analysis,* 3d Ed., New York: William Wood, 1923, p. 99.

[5] Ernest Jones, *Ibid.,* p. 98.

[6] Helge Lundholm, "Post-mortem on a Printer's Error," *Char. and Pers.,* Vol. xiii, no. 1, 1944.

Frustrating agencies (obstacles) as well as means, are apprehended as similar by purposively selective cognition. Cognitive contents as diverse as a stone wall and a social taboo may be coordinated as barriers or obstacles. In the vector psychology of Kurt Lewin each one of these is recognized to possess an equivalent, that is to say, a "negative valence."

The act of relating similar with similar is called by some writers "apperception" or "apperceptive synthesis." Though practical apperception, as here described, is an act of coordinating similars, nevertheless, it is an act of far greater "intellectual value" than simple recognition. This, I believe, has been first called to attention by G. F. Stout.[7] Simple recognition or, as

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[7] G. F. Stout, *Groundwork of Psychology,* New York: Hinds, Noble, Eldredge, 1903, pp. 121-126.

Stout calls it, "reproduction or revival *by* similars" is a relatively trivial mental act; it merely brings back in succession two contents already associated psychologically. In contrast to this, apperception or, to use again Stout's expression, "reproduction of similars," would seem to be an act of creative synthesis; it brings together contents not previously coordinated. "It is," writes McDougall — an ardent admirer of Stout — "the main instrument of scientific discovery, the essence of all that can properly be called wit and reasoning, and the soul of poetry. By this operation are discovered all remoter resemblances, all analogies, homologies, similes and metaphors . . . The same process is involved in what is called 'forming of abstract ideas'. Some quality of one thing suggests another very unlike thing that has the same or similar quality. We then discriminate this quality and give it a name, and thus become capable of thinking of the quality in detachment from all particular things . . ."[8] I made a reference to this in my exposition of the development of the moral sentiments in the human being (Ch. VI, p. 179).

Apperceptive synthesis, no doubt, has been instrumental in our acquisition of certain remote concepts which, despite their remoteness and abstraction, are constituents in the world of common sense of the civilized man. It is, perhaps, through apperceptive synthesis that we have achieved the comprehension of space in the abstract sense, space beyond the presently perceived, culminating in the conception of spatial infinity. It is also, perhaps, through apperceptive synthesis that we have achieved the comprehension of the infinitely remote future and the infinitely remote past, that past which is prior to the beginning of our individual life-course. Thirdly, it might be through apperceptive synthesis that we have come to apprehend causal relations, these most important relations in the world-view upon which we adjust ourselves in everyday life. For, it has been suggested that our experience of our own striving self is a unique and immediate experience (compare the view of Sherrington quoted earlier) which, by analogy, we impute into the world around us, perhaps first into obstacles, then into means, and finally into all things. The saying: "everything has its cause" is a common sense predication from which, it is true, science of today tends to diverge.

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[8] William McDougall, *Outline of Psychology*, pp. 388-90.

We shall now give heed to the problems of memory, and again, we shall begin by considering one of the classical laboratory experiments on that important act of cognition. Read to your subject and re-read a sufficient number of times a series of nonsense syllables. Then, ask him to repeat or reproduce the series in correct order. This task involves a relating of present with past and also of past with past — each heard reading of the series being an item of the past. If the subject succeeds, it is said to be due to reproduction by temporal contiguity. The act requires associative as well as dissociative power of cognition.

The act of grouping things together on the mere ground of superficial similarity of appearance is rare in normal practical life. Even more rare is the act of relating items merely because— in the past — they have been temporarily contiguous. Conation again selects the relating acts and their relata in a manner that does not, unless accidentally, conform with the alleged law of reproduction by temporal contiguity. Consider, as an example, the instance when memories of past successes or failures in a certain kind of endeavor are brought to bear upon a similar present endeavor. Surely, these memories need not at all have been temporally contiguous. On the contrary, they are selected from various periods of a person's past experience, selected as guides (means to an end) of the present endeavor. Henri Bergson has some wise words in comment on that state of affairs. ". . . What is the role of memory in the animal? It is to recall to it, in each circumstance, the advantageous or injurious consequences which have followed under analogous conditions, and so to teach it what it ought to do. In man, I admit, memory is less the slave of action, yet it adheres closely to it. Our memories, at a given moment, form one solidary whole, a pyramid whose point coincides with our present, — with a present moving ceaselessly and plunging into the future."[9]

The law of reproduction which is actually manifest in practical life I have discussed elsewhere under the name of "the law of affinity of cognitive dispositions." This law transcends the temporal contiguity of the past. In 1934, I wrote concerning it as follows: "It is my intent to offer . . . a theory to substitute for the inadequate principle of association of ideas adhered to by sensationalist psychology or, perhaps I should rather say, to formulate a psychological law that will account more adequately for the phenomena pretended to be explained by the process of association in a mechanistic sense. The law I have in mind might be called the *law of affinity of cognitive dispositions.* It can be stated as follows: Any important unit of the memory-continuum; that is, any disposition to think or to mean a past conative cycle is prone to become activated whenever the . . . impulse is again at play which originally urged the latter. In other words, whenever an . . . impulse is initiated, the meaning process of that impulse will activate not merely such mental structure as carries the awareness of the (EO)-relation-to-satisfy a need; it will expand also into the memory-continuum, selecting and activating all cognitive structure that was once built up around the same impulse. This denotes that the meaning process comprises a more or less explicit survey of selected parts of past experience, a process of expansion that constitutes the first necessary condition of guidance of present conduct by bygone experience. The conscious review is a review not only of earlier success, but also of earlier failure in attaining the very end which is the goal of the present impulsive endeavor, review of failure being the second necessary condition of guidance by memory . . ." [10] The law of affinity of cognitive dispositions can be illustrated by the attached diagram (Fig. 22).

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[9] Henri Bergson, *Mind-Energy; Lectures and Essays;* (tr. H. Wildon Carr). New York: Henry Holt and Co., 1920, p. 116.

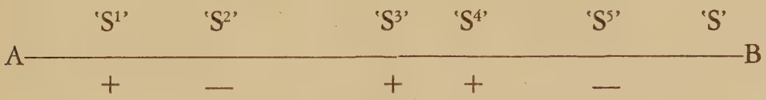

Fig. 22

Let the line A—B in the figure represent the hypothetical chronological memory-continuum of a man; S, at the right end of the line stands for a certain sentiment at work at present; S^1—S^5 stand for units of the chronological memory-continuum that has been built up during earlier functions of the sentiment S. The law, then, holds that while S is at work there is a likelihood for any one memory disposition S^1—S^5 to be activated. The pluses and minuses underneath the S's imply that the memory units activated might be either memories of past success or of past failure.

The law of affinity of cognitive dispositions attains an indirect support by the fact that the law of forgetting is its psychological opposite. In the classical laboratory experiments a type of forgetting was established that was merely a function of the elapse of time; nonsense syllables were again used in these experiments. By kindred methods it was also established that there is a type of forgetting which is due to so-called retroactive inhibition. Those who are not familiar with these academic findings, need not be greatly troubled, for, while it is possible that in practical everyday life there is a forgetting which is the sheer function of time and while there might also be a forgetting by retroactive inhibition, these types of forgetting unquestionably are of far less significance than the forgetting that ensues from repression. The maxim of forgetting by repression, I attempted to shed light upon in an article of 1932. It deals essentially with the pathological forgetting known as functional amnesia, but, since there is no sharp line between the normal and the pathological, my theory no doubt applies to the oblivion on the part of people who are perfectly normal in the sense that they effectively adjust themselves to their social group. Though repression is an unhealthy act, all of us in minor concerns exert repression and as a result we forget things that we do not desire to remember; perhaps we resent these because they refer to events in which we failed or even showed the serious shortcoming that might give rise to a feeling of guilt. In order to restate my theory of forgetting, I quote a brief passage from my article in 1932. "In functional amnesia, we have an inhibition by a subconscious mechanism, which attacks, not directly the function of thinking again the past experience, but the specific striving which was at work relative to the experience on its occurrence. Such inhibition will modify the meaning of the experience, so as to make it appear as not the subject's experience. If this theory is valid the subject, suffering from the amnesia, will be able to think the event; if it should be related to him, he will grasp cognitively the story told, but the story will not be experienced as something that has happened to him in the past, he will disclaim it as a personal experience of his own. Except if the story of the event is told to him he will not spontaneously and voluntarily think of it, for the simple reason that there will be no incentive for so doing, the event having, by the inhibition referred to, become indifferent to him."[11] The principle of forgetting by repression can be illustrated by the figure below (Fig. 23). This should

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[10] Helge Lundholm, *Conation and our Conscious Life*, p. 66.

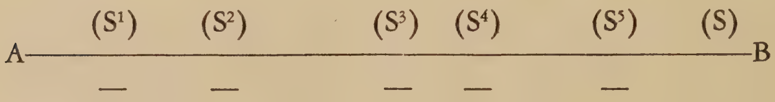

Fig. 23

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[11] Helge Lundholm, "The Riddle of Functional Amnesia," *Journ. Abn. and Soc. Psych.*, vol. xxvi, no. 4, 1932.

be compared with the one designed to symbolize the law of affinity of cognitive disposition (Fig. 22).

Here, again the line A—B represents the hypothetical chronological memory-continuum of the individual. S, at the right end, represents a sentiment which is repressed. As the result of the repression of that sentiment all the units of experience of the past (S^1—S^5), which have been built up during the function of that sentiment, are forgotten in the sense that they will never be spontaneously reproduced and if respective events are related to the subject they will be understood but they will never be apprehended as a part of the individual past: they have lost their ego-reference because of the inhibition by repression of the conation in the course of which they were once a part of the subject's present. (S^1—S^5), in this figure, have all been qualified by a minus sign; this is because as past experiences they were failing conative cycles, this being the very reason for the repression of the sentiment that prompted them.

The law of forgetting by repression, I formulated in 1930; its publication, for reasons that need not be specified, was delayed until 1932. At that time the law of affinity of cognitive disposition was not clearly outlined in my mind. When, in 1934, I first formulated the latter law, I did not think at all of the law of forgetting that I had propounded four years earlier. Consequently, it was a pleasing incident later to discover the harmony between the two laws, each of which had been designed on its own data and merit.

In man, explicit memory becomes the most important means to an end. The simplest instance of the use of memory as a means to an end would be the act of relating a present endeavor with memories of past success or of past failure in the same or similar endeavor. An instance of such purposive selection by the cognitive act is here submitted.

A man — prompted by a sentiment (S) — strives to reach a little village where he has never been before. He has been following a beat that he believes is leading to the village. In the course of time he arrives at a fork in the road. He has not the slightest notion whether he should take to the right or to the left. In his dilemma, he chooses the left, but, after an hour, he finds himself on the shore of the ocean where the road ends. All he can do is to retrace his steps until he comes back to the fork from which he now continues his journey to the right. Thus, he finally reaches his destination, the village. Many years later the same man — again prompted by sentiment (S) — is on the same road on the way to the same village. Like on the first occasion, he arrives at the fork, and for a moment he hesitates which way to turn. But, while his judgment is suspended, his memories of the earlier journey, (S^1—S^5), becomes more and more distinct: and soon he clearly recollects that the left road takes him to the oceanside while the right one goes straight to the village. Consequently, he chooses the latter. The clearly remembered fact that the left turn leads to the ocean now rectifies any incipient inclination to choose it again. At the same time the clearly remembered fact that the right turn leads to the village assists the corrective function of the first recollection. As the final outcome of his act of relating present with past, he avoids the left road turning, instead, to the right.

The case submitted illustrates in the simplest terms possible the purposive selectivity of practical cognition in the case of guidance by memory. It is interesting that in such instances the memory of a past failure functions very much like an obstacle, while the memory of past success functions as a means.

An incidental reflection, unpretentiously submitted for what it might be worth: there is a considerable difference in the facility with which, in the laboratory, we reproduce nonsense syllables and, in practical everyday life, meaningful memory-contents. A plenitude of meaning invested in the material to be reproduced seems definitely to facilitate its reproduction. Meaning, inevitably, implies significance; since significance hardly can be conceived otherwise than as significance for something and since that something would seem necessarily to be an end or goal, goal-directedness or purpose apparently emerges as the facilitating factor. In case that, for the sake of the unceasing adaptations required by our struggle for life and for ideals, our auxiliary memories would have to come to us in accord with the law of reproduction by temporal contiguity, we would soon succumb because, to use the expression of a well known contemporary statesman, we would all the time "miss the bus." Fortunately, however, the human mind is otherwise contrived. We remember in accord with the principle of affinity of cognitive dispositions, a principle that is, at a time, efficient and economic.

The law of reproduction by temporal contiguity was demonstrated under the artificial conditions of the laboratories of the great pioneers in experimental psychology. Another law of reproduction was also demonstrated under the same conditions. The type of experiment leading to the latter shall first be briefly described. Place in a row on a table ten different small objects, each so far as its use is concerned unrelated to the rest: a knife, a piece of candy, a comb, a bottle, and what not. Let your subject look at the objects for a while. Then, sweep them all off the table into a bag. Give the bag to your subject and ask him to arrange the objects on the table in the order in which he had seen them earlier. In this task is involved a relating of each object to the next as remembered in the series, also a relating of each object to the whole pattern formed by the remembered original arrangement. Success in this task would be considered due, largely to a reproduction by spatial contiguity. The act, as can be readily seen, is a cognitive act of associative and, in a measure dissociative selection.

Though, in practical life, acts of cognitive selection by spatial contiguity are rare, they are not entirely lacking. There may be instances when the unfolding of a conative cycle requires such reproduction. It is interesting to compare these approximately clear practical cases with the cases of spatial and temporal contiguity in the laboratory. I have just undertaken the homologous comparison in reference to reproduction by temporal contiguity. That comparison revealed a striking difference in the solidity of registration and, accordingly, in the facility of reproduction of meaningful versus nonsense memory material. Compare, now, the arranging of the ten unrelated objects in the order in which they have been previously perceived with the relating act in the following situation. You are to join the staff of an institution where you have never been before. You are naturally interested in it and, before going there, you secure a map of its architectural outlay. On this map, you find the building in which your own special unit is located. You are intensely concerned with its spatial relation to other buildings devoted to other special inquiries. Prompted by your practical interest, you readily discover the spatial organization of the total outlay. Some time later you arrive in order to commence your duties. Immediately on entering the gates of the institution you recognize the topography of the place. Without difficulty, you find the building in which your own activities are to be focussed. Without difficulty, you also identify buildings devoted to other though related activities. Your familiarity with the exterior of the institution is due largely to a reproduction of spatial relations registered in viewing the plan of the same. Your reproduction of the spatially contiguous items is very much easier than your reproduction of the spatial order of objects in the laboratory experiment. The ease with which, in the former case, you recognize the spatial outlay is due to your interest (conation), especially to the fact that both in the original relating of items, as indicated by the plan, and in the present reproduction of these, your acts have been and are constituents in a practical conative cycle, giving meaning and significance to the interrelation of the items. The state of affairs is very much like the one of the reproduction of meaningless versus meaningful memory material. The meaningful significance of interrelated items is in both instances absent form the laboratory situation.

Whenever the progress toward a goal is obstructed by a situation the control of which requires deliberate planning through inference or reasoning, past, present and future become interrelated in a very intricate manner. Let us begin with examining a simple laboratory experiment on the act of inferring; its task embodies a distinct act of relating present with past and with future. Though I have performed this experiment in class repeatedly, I cannot guarantee that I am the inventor of it. Write, while your subject is watching, a capital B, then a reversed capital B (ᗺ), then a capital C, then a reversed capital C (Ɔ), then a capital D, then a reversed capital D (ᗡ), then a capital E, then a reversed capital E (Ǝ), then a capital F. Then erase all your writing except the capital F, and ask the subject simply to continue the series. In case he writes a reversed capital F (ꟻ), then a capital G, then a reversed capital G (ᘐ), he has performed to satisfaction. He has achieved by analogy the generalized relation right-reversed which would be an act of induction; he has also utilized his generalization in the deduction of a correlate: reversed capital F (ꟻ) following capital F. In this task is embodied a determination of a future act on the basis of present and past experience. The experiment is especially interesting because it involves abstraction (dissociation of the form of a relation from the individual relata), combined with a recognition of the identity of the relations between the different relata. In each pair of relata, the subject discovers the common relation right-reversed. The experiment challenges a higher expertness of cognition than the previously reported experiment; for, it calls for an act of apperceptive synthesis.

Let us now proceed from laboratory to life. The man in search of the village finds twilight falling before he reaches his destination. Suddenly, he sees on the road in front of him an elongated curly shape. It strikes him that it might be a snake. He is slightly apprehensive because if it is a snake he ought to advance with caution. Psychologically, the curly shape is an obstacle to his progress. His surmise that it might be a snake is evidently the result of his relating the presently perceived shape with his past acquired experience of snakes, direct or indirect. He is not certain, however, that it is a snake. How is he to find out? It occurs to him that if it is a snake it ought either to crawl away or be killed in case he throws a stone at it; in any one instance, the road would be clear. This idea is again the consequence of his act of relating the present situation, on the one hand, with his knowledge of snakes; on the other hand, with his knowledge of stone-throwing — direct or indirect. But the idea also has a future reference; he infers and anticipates a future event on the ground of his experience of the present and of his memory of the past. More especially, it involves a deduction, that is to say, an inference from a general supposition to an individual one. His total act of reasoning, thus, incorporates a complex act of relating present with past and with future and past with future. He proceeds to pick up a stone and throws it at the shape. The shape crawls away; it is a snake and his obstacle is removed.

The future reference of insight into means-obstacle-end-relations — be the insight archetypal (spontaneous) or founded upon memory — is called prediction. In everyday life, we are continually predicting coming events (if we did not, we would soon succumb); our predictions continually pattern our plans and guide our conduct. For example: on a summer eve, you see the sun set in a diffuse haze and you say to yourself, "It will be another hot day." Or, on an autumn morning, you notice clouds gathering in the sky and you reflect, "We shall have rain before noon." In any one of those instances, your prediction is based upon your viewing the present in the light of the past; your prediction is a deduction of a future event from a generalization of the past.

Simple insight and the simple relating of present endeavor with past success or failure in similar endeavor do not suffice to guide conduct in more complex situations of life. Whenever the overcoming of an obstruction is a difficult affair requiring numerous intricate means or auxiliaries the application of which — since they offer an option of means — has to be carefully planned, an extremely circuitous reference of present to past and future and of past to future is necessary. In such complex instances, the total purposive act or, rather, the desire or wish prompting it, unifies and integrates all the relating acts and their relata. These are all tied together into a complex whole by their final reference to the (EO)-relation-to-satisfy a need. All items interrelated attain their significance and connectedness in virtue of their participation in the endeavor as a whole. Consider for the sake of illustration, the following fictitious event gathered and reformulated from a cheap melodramatic adventure story not to be named.

A thief knows a treasure is hidden in a cave in a high cliff. He wishes to secure the treasure without risk. The cave is difficult of approach and he has to plan with the greatest care how to reach it. His cognitive act of planning shall be quoted as if it were spoken by himself: The cliff is high and its walls are slippery — they are difficult to climb — I fell down once climbing a cliff — that time I had no rope — where can I secure a rope — in the back alley is a ship chandler's store — but, I have no money to buy a rope — the storekeeper might lend me one — he is not likely to; people say that he is a miser — furthermore, he may ask why I want it — I shall have to steal the rope while he is away, waiting until tonight after he has closed up — but, then it will be dark, I cannot climb the cliff in darkness — the storekeeper goes to his lunch every noon — he never locks his door; it is not required, a gendarme has his beat outside — how shall I be able to get by the gendarme — the change of patrol; he always walks to the far end of the street meeting the new guard arriving; they always talk a while together — this happens while the storekeeper is away — I must try to steal the rope then . . .

Accept — with my apology — this illustration of complicated planning of means to an end. Whoever cares to analyze it will note its purposive selectivity as revealed in: (a) the repeated backward and forward reference of present to past and to future and of past to future; (b) the functional property of each link in the chain of thought leading gradually to the problem-solution; and (c) the unity of the total progress of the cognitive act resulting from the fact that each constituent item related to the rest is also directly or indirectly related to the final goal-attainment.

I have given a considerable time to argue that the laws of cognition, emerging in the psychological laboratory from studies performed under artificial circumstances, do not fit the cognition of practical everyday life. In the laboratory, the selection of relata seems to be essentially dissociative-associative while, in practical life, the selection of relata is purposive, that is to say, the items related with one another are ultimately relevant to an end or goal. Nevertheless, the old laws of association, confirmed in the psychological laboratories were claimed to account for all cognition. A school-man of the past, no doubt, would be shocked if he read what is to follow.

As we remember, the laws of association were the ones of association by similarity and by spatial and by temporal contiguity. Apart from the laboratory situation, there exist only a few conditions when cognition seems to unfold itself in accord with that fairly clearcut principle of dissociative-associative selection which is essential to the three classical laws of association. In no one of these instances does dissociative-associative selection serve as a constituent in any practical conative cycle.

In the act of relating past to past, known as "passive reminiscing" (the adjective *passive* indicating that the reminiscing occurs during a general mental state of relative composure or relaxation) the cognitive selection of items might seem to follow the laws of association by similarity and by temporal and spatial contiguity. The reminiscing of aged individuals who have ceased to strive with regard to the future,— I have earlier characterized these as psychologically dead — is likely to be of that type. There is another instance when one's memories or one's reproduction of the past seem to be essentially guided by association through temporal contiguity. That is when knowingly one faces what is believed to be inescapable death and when accordingly one has resigned all adaptive conation. One's life, then, is said to pass in review before one in approximately chronological order. Reliable evidence of this phenomenon is, of course, scarce, but the theme recurs in the fiction of all times. People on the verge of drowning, having given up all struggle, after rescue, have reported confirmative fragments of recollection from a dim world, on the border of the beyond, in which even distress was non-existent.

It is a singular fact that reproduction by superficial similarity of appearance is likely to occur in a definitely pathological condition. I refer to the so-called "flight of ideas" of manic-depressive patients in the manic phase of the disorder. In these cases we can frequently observe a selection of thought progress by the utterly superficial similarity of items. For instance, an idea denoted by a certain word will reproduce another idea (entirely different as to meaning) denoted by a word that rhymes with the first one. As an example, *Ukraine* will reproduce *Spanish Main* or *entertain.* At other times, one word will reproduce another when there is merely an intersyllable resemblance between the vowels of the two words; for instance, the word *house* might reproduce the idea of *brown* or *gown* (assonance); or a word beginning with a certain consonant might reproduce the idea of a thing denoted by a word with the same initial consonant, or consonant sound, for instance: *cat-coin-collier,* or *kings-cabbages* (alliteration). In all these instances the meaning of the words, that for which they stand, seems to be of little or no significance in the disordered act of relating items. Association by sound similarity of the word, however, is never the sole determinant of the flow of the manic flight. It is mixed with reproduction by spatial or temporal contiguity and it is frequently interrupted by distraction through impressions of present things. In the case of manic flight, the condition of the unusual cognitive selectivity is a complete disturbance of organized or integrated conation probably by a toxic agency. In less extreme form, flight of ideas is manifested by people who, in their activities frequently "depart along tangents." The art and charm of Gracie Allen, the actress, used to be her masterful ability of simulating rambling, flighty verbation. A classical character showing continually that semi-normal flight is Flora Cashby in Dicken's *Little Dorritt.*

In so-called "free association" in the Freudian sense, one would perhaps expect to obtain the same type of cognitive selection as in the passive reminiscing. The fact, however, is that one rarely does. The frustration of one's expectation might here be due to the fact that the "free association" is anything but free. Indeed, the term "free association" would seem to be a genuine misnomen, completely inadequate to the phenomenon to which Freud refers (*nota bene* if his own interpretation of the latter is correct). For he stresses that the "free association" will gradually lead to a complex, will gradually reproduce an idea that will reveal that complex. This, in Freud's view, would be an expression of the inherence in any one complex of a tendency to express itself whenever conditions permit. In other words, the complex is the prompting motive and the selector of the associated relata. Furthermore, the act of "free association" according to Freud, is frequently blocked, this being particularly the case when the trend of association approaches the complex, when, to use a colloquialism, "the situation becomes hot." The blocking, in the terms of Freudian theory, would be the result of the activity on the part of the repressing agent, the "censor," that part of the self which originally has been responsible for the act of repression and for the creation of the complex. Here, then, is a second determinant of selection, the desire on the part of the "censor" continually to conceal to the individual the nature of his complex and, for that purpose, continually to interfere with the indeed utterly *un-free* "free association."

The motivation prompting practical cognition is readily identified; it would be any type of special adaptive conation: a simple — perhaps instinctive — impulse, or a complex sentiment; it might be fear, greed, friendship, or what not. The motivation prompting artificial cognition, on the other hand, is more difficult to establish except in the negative. It is not a practical impulse urging the realization of an ego-object-relation-to satisfy a need required by the biological or social welfare of the individual. Nevertheless, it is a mode of conation, a drive that stirs one to cognize relations, as it were, for their own sake. At present I shall call it the X-sentiment but very soon I shall specify it. Anticipating the theory to be unfolded, I here suggest that the X-sentiment is the same in all artificial cognition. It is very important not to confuse the X-sentiment with what might be called the *guiding tenet* or the *rules of the game* of artificial cognition; for while the prompting motivation remains the same, the rules of the game in different kinds of artificial cognition may vary greatly. In aesthetic and in mathematical cognition these rules are very complex. In general, I believe, one might say that guiding tenet or the rules of the game prohibit the X-sentiment from functioning on its most parsimonious level. Though, in the classical laboratory, the thinking of the subjects was not entirely without a guiding tenet, the latter was so simple that the X-sentiment discharged approximately on the level of parsimony or least resistance.

The tenet guiding the cognition of the subject in the classical laboratory situation were the instructions given by the conductor of the experiment. These were easy to obey: to observe simple events signalling their occurrence; or to reproduce these events by simple manipulations; or perhaps to describe them verbally. No one of these acts required was of any practical significance to the subject; since, as a rule, he was unaware of the experimenter's aim, he applied himself to his task as he would to a relatively indifferent game.

Due, on the one hand, to the artificial nature and the simplicity of the guiding tenet (the instruction) and, on the other hand, to the simplicity of the laboratory situation, there were captured in the classical experiments the simplest instances of cognition, that is to say, of acts of relating relata; this was true whether the cognitive acts related merely present with present or they related present with past and with future. And, what came out of these experiments? The laws of association.

Incidentally, what is the guiding tenet in passive reminiscing and in the "flight of ideas"? It is evidently neither an instruction, as in the case of the laboratory situation, nor anything of the order of the rules of the game whether of mathematical or of aesthetic thinking. In fact, the prompting impulse or the X-sentiment would appear to function in accord with a law of least resistance (parsimony) inherent in its own nature. And, again, what does that function reveal? The laws of association.

The cognitive events in the laboratory situation seemed to consist in acts of relating objects to objects without any desirous or affective reference of these to the self, whether directly as goals, or indirectly as obstacles or as means. In so far as an *unlike* was observed and that unlike was spatially related to the observer, this relation was not one of the appetitive kind; for, the self entering into it was merely the extended or bodily self (apprehended — if at all — as an object among objects) and not as a striving or desiring self. This character of the relating act would class it with the third mode of apprehending cognitive relata (C): the apprehension of these in centrifugal interconnection with one another and with the universe at large. Nevertheless, the cognitive act is neither of the type of the purely logical thinking of the mathematician nor is it of the type of aesthetic contemplation. The manner in which it differs from these lies respectively in the difference of the guiding tenets.

An incidental reflection: Youth, the time when — through education — we acquire a system of knowledge, has been called the experimental period of life. Does that mean that our cognition at the time of youth is artificial rather than practical? In the achievement of education is embodied highly complicated acts of relating psychological items of simple and of complex nature to one another and to knowledge at large. In many instances it might seem difficult to establish the end or goal served by this prolonged and intricate endeavor to assimilate the wisdom accumulated by our forefathers during uncountable generations. This is because the goal is remote and may not be explicitly defined at the time of learning. In acquiring knowledge we store, so to speak, potential means of achieving future important ends. This being the case, I believe we have to consider the cognitive acts embodied acts of practical cognition — it is true, with suspended aim and thus with a transitory emphasis upon the centrifugal relation of objects to one another and to the universe at large [apprehension-mode (C)].

The question of the motivation prompting artificial cognition has been raised but, as yet, not answered. It has been spoken of as the X-sentiment and the suggestion was put forth that it is common to all modes of artificial cognition; this would mean that the X-sentiment prompts the relating act on the part of the laboratory subjects as well as the one of the pure mathematicians and of the spectators of beauty. In our search for the identity of the X-sentiment, heed should be given the fact that any identification is necessarily hypothetical; the hypothesis about to be presented, without essentially multiplying postulates, will, however, be of a considerable pragmatic value.

The least violation of common sense would be to identify the X-sentiment with what is commonly known as curiosity. That identification does not multiply hypothesis, for it accepts one of the already recognized instincts giving it merely a role, in some respects, slightly broader, in others, slightly narrower, than the one assigned to it by McDougall and others.

I suggest that all impulses describable in the terms of their aim or goal be divided into two main groups, (a) special impulses and (b) general impulses. Among the special ones would then belong all the instinctive impulses and all impulses prompted by sentiments, simple or complex. The reason why I wish to distinguish the general impulses from the special ones is, obviously, first their lesser specificity of aim. All the special impulses would seem to have quite specific and individual goals (innate or acquired); whereas the general impulses do not. As two of the most important of the general impulses must be regarded: *general curiosity* and *general deference.* General curiosity appears to aim at the sheer understanding of object-object relations of an infinite variety of kinds. It does not, *per se,* prompt any overt locomotive activity serving the actual realization of an (EO)-relation required by adaptation. As regards general deference, I have argued the thesis that it is the conative agency in all belief — that which makes one act upon and be guided by one's beliefs and convictions.[12] This hypothesis shall be further examined later. There is a second reason for the separation of general curiosity and general deference from the special impulses. Each one of them might cooperate with any one of the special impulses. The cooperation of general curiosity with special impulses shall be fully explored presently. The role of general deference as a cooperating agency in any one mode of special conation will be readily recognized by anyone who acknowledges the energetic property of belief. There are some reasons why we might feel tempted to add to the list of general impulses: the tendency of primitive passive sympathy, sleep, and, perhaps, also the destructive impulses of pugnacity. No qualifying comments on that matter have as yet been prepared; they are not required by the unfolding of our general doctrine. This much, however, may be suggested that, by placing all the fourteen instincts — as it were — on one and the same level, McDougall failed to realize some vital differences in their respective functions, differences to which I have here been partly referring.

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[12] Helge Lundholm, *Conation and Our Conscious Life,* and *The Psychology of Belief,* Durham: Duke Univ. Press, 1936.

As a matter of theory, then, I define general curiosity as *the impulse which prompts or yields the cognition of object-object relations* [apprehension mode (C)], the simplest of all object-object relations apprehended being the *sensing of an unlike on a ground.* In contrast to general curiosity (again as a matter of theory), special impulses — in so far as they prompt cognition — prompt merely *the cognition of the (EO)-relation-to-satisfy their respective needs* [apprehension mode (A)]. From these presuppositions it follows that, whenever during goal-seeking activity, we relate means to obstacles to ends (in simple insight as well as in complex planning) our cognitive act is the result of the cooperative function of general curiosity as well as of some one or the other of the special impulses (sometimes, as in the case of complicated sentiment units, of more than one kind of special impulse). Here, my statement diverges from one earlier made; when, describing the three sub-acts of conation, I suggested that special conation itself was responsible, not only for the cognition of the EO-relation, but, as well, for simple insight and for planning by complex reasoning. Since the theory of general curiosity, at that stage of my argument, was not at hand, this was the only possible way of offering a provisional account of the role of the three sub-acts. Assuming as we have done, that the cognitive acts of the laboratory subjects, as well as the ones of the mathematician and of the visionary of beauty are essentially acts of relating objects to one another [apprehension mode (C)], it also follows that they are essentially urged by general curiosity.

Having formulated the hypothesis of general curiosity our next task will be to examine its application to the interpretation of all the important features of practical cognition. This would cover all the instances when general curiosity cooperates with special conation. A later assignment will be to survey in the instances of artificial cognition, the operation of the impulse in relative solitude.

Whenever general curiosity cooperates with special conation, this means that the two impulses have to be simultaneously excited by some event in the physical continuum, an event irradiating into the bodily organism through afferent conduction within the nervous system. The instigating event (as always when adaptive conation is evoked) is an event that threatens in one way or the other the safety of the living being. While thus special conation is stirred exclusively by events in the physical continuum which call for adaptation, general curiosity — this being an important feature of our hypothesis — might be evoked by any one event in the physical continuum which falls within the present limits of human apprehension.

The perception of a goal-object is one of the simplest acts of practical cognition. Simple perception of a goal, an act which strictly speaking occurs only in instinctive activity and there — if one wishes to be utterly precise — only the first time a specific instinctive disposition is evoked, is constituted of at least three interdependent acts: (1) the "sensing of an unlike"; that being a cognitive tribute of general curiosity (discriminative selection); (2) the imagination of an ego-object-relation-to-satisfy a need, a cognitive offering of special conation; and (3) the act of referring the object of that imaginary relation to the sensed unlike, a projection of it onto, or imputation of it into, or fusion of it with, that unlike. As the last mentioned act is one of referring one object to another object, it is, again, prompted or yielded by general curiosity. On occasions when, as soon as an impulse is stirred, the goal-object is *recognized* rather than simply perceived, the term "recognized" implies a partial qualification of the goal-object by individual past experiences. The act of apprehension is now slightly more complex though it always incorporates the three components described. The further elaboration of this theory of simple perception and of recognition requires a brief consideration of the function of certain parts of the nervous system.

The nervous system of any living human being is part of the physical continuum to which, in virtue of his bodily property, he belongs; nervous process *per se* we venture to be of the nature of non-mental, that is to say, physical chemical events. The great advantage enjoyed by the organism possessing a well-developed nervous system has four aspects (in describing the first three of these, I shall use a term "reverberation" for the simple reason that this term is entirely non-committal as to the particulars of the physico-chemical process of nerve conduction):

(1) The nervous system, through its *afferent exteroceptor processes,* fashions the body into an extremely sensitive instrument of reverberation particularly to events in that part of the physical continuum that is external to the organism.

(2) The nervous system, through its *afferent interoceptor processes* fashions the body into an extremely sensitive and discriminative instrument of reverberation to certain physical events within the body itself.

(3) The nervous system, through some of its afferent interoceptor processes, *the proprioceptor processes,* also fashions the body into an extremely sensitive and discriminative instrument of reverberation to such physical events as changes in the positional and postural status of the body as a whole as well as of its member parts.

(4) The nervous system, through its *efferent processes,* fashions the body into an extremely sensitive and proficient instrument for the execution of reactive modification in the relation of the body to its physical surrounding (adaptive reactions required by the safety of the living being).

The role here ascribed to the various divisions of the central nervous system is over-schematized. However, for our present purpose, there is no need of any detailed mention of exceptions to the general rule. As is implied by the first three of our brief statements, the afferent (inleading) part of a well-developed nervous system has two functionally different divisions, the exteroceptor and the interoceptor division. The proprioceptor division is now as a rule spoken of as a subdivision of the latter. There are however certain disagreements among physiologists where exactly to draw the line between the interoceptor division proper and the proprioceptor division. The argument is entirely an issue for physiology and embryology and need not concern us here. The exteroceptor system reverberates directly to certain physical events originating outside the organism — thus effecting the immediate continuation of these within the body. The interoceptor system reverberates directly to physical events within the body. These events may or may not be accessory to events in the external physical world. In either case, the interoceptor system introduces a close continuity between all bodily events; thus, it contributes also to the continuity of external and internal physical events which is largely established by the exteroceptor system. Frequently, internal events, instigated and guided by conation, excite interoceptor process; the beginning reactive events which through efferent (outleading) conduction effects our adaptation by overt locomotion would illustrate that causal chain. The part of the interoceptor system called the proprioceptor division reverberates directly to such bodily events as changes in the status of the skeletal muscles and also to changes in the position of the body as a whole (its passive motions). As in the case of the other reverberations of the interoceptor system, the events to which the proprioceptor system is tuned to resound might be accessory, whether directly to events in the external physical continuum, or to bodily reactive events instigated by conation. The somewhat complicated relations I have here attempted to formulate into words might become clearer through the inspection of the appended diagram (Fig. 24).

Basically, the diagram is the homologue of the ones in the seventh chapter, the only difference being that the central circle, standing for any member of the species *homo,* has been much enlarged; this was necessary in order to allow the representation of those spatial events within the body-part of the living being which we wish to symbolize. The right hyperbolic enclosure, as before, signifies the infinite physical continuum to which, in virtue of his bodily property, man belongs. The left hyperbolic enclosure stands for the infinite but non-spatial mental continuum to which, in virtue of his mental property, man also belongs. The center of the circle, which is also the place in which the two hyperbolic arms touch one another, stands for the mathematical point of psycho-physical interaction. The straight line (A), beginning high up in the extra-organismic part of the physical continuum and proceeding through the organism to the mathematical point of interaction, symbolizes the activating event. The other straight line (R), beginning in the latter point (the mathematical point of interaction) and proceeding downwards toward a low section in the extra-organismic part of the physical continuum, symbolizes the reactive event. The little disc in the mental continuum to the left of the interaction point represents the two conscious sub-acts of conation, the affective and the cognitive, each one of which guides the reactive event (R). It should be noted that in part the activating event (A) as well as the reactive event (R) proceeds through the body of the living being. In the former

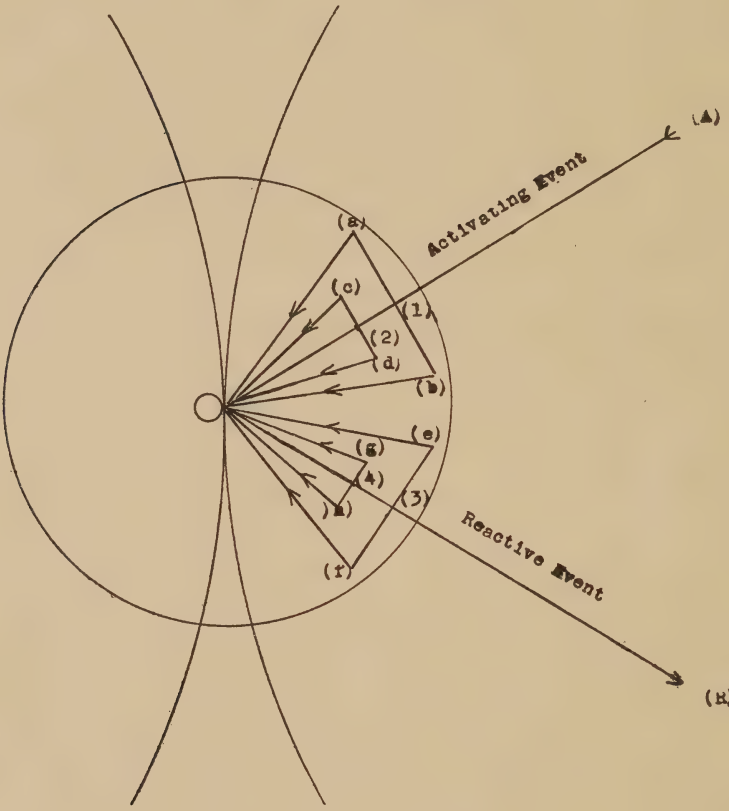
(A)
Activating Event
(a)
(c)
(1)
(2)
(d)
(b)
(e)
(g)
(4)
(h)
(3)
(f)
Reactive Event
(R)

Fig. 24

instance (A), that progress is essentially through afferent or inleading nervous conduction while, in the latter instance (R), the progress is essentially through efferent or outleading nervous conduction. Four little lines have been denoted respectively as (1), (2), (3), and (4). Of these, (1) and (2) are at right angle to the line (A) representing the activating event, while (3) and (4) are at right angle to the line (R) representing the reactive event. All the four lines [(1) - (4)] are intended to stand for possible collateral inductions of nervous events by the major inleading afferent event, on the one hand, and by the major outleading efferent event, on the other. Such an induction, in any one case, might possibly excite interoceptor receptors. From these — I have indicated them by small letters [(a) - (h)] — new afferent or inleading processes might be set up tending, themselves, towards the mathematical point of interaction. Heed should be given the fact that, not only in the case of receptor excitation collateral to the main afferent (inleading) conduction, but also in the case of such an excitation collateral to the main efferent (outleading) conduction, the excitation of the interoceptor receptors, in all instances, initiate afferent or inleading conduction. All the lines originating respectively in the receptors [(a) - (h)] have arrowheads signifying their centrally directed progress. Any one of these bodily nervous events, by exciting mental activity, might yield experiences.

Events in the afferent nervous system, whether in the exteroceptor, the interoceptor, or the proprioceptor division — being events in the physical continuum — might under certain conditions stir the impulse of general curiosity. Whenever that is the case, these events become known to the apprehending self or mind in the terms of simple awareness symbols, more especially, they become known as simple unlikes which, on the one hand, are related to a ground, and on the other are related spatially to the body, being projected either outside or within the latter. Outside projection is characteristic of exteroceptor, inside projection of interoceptor, unlikes. These qualities or symbols of afferent neural events, these simple unlikes, I suggest, constitute the so-called *sensations* which have been raised to such eminence by atomistic psychology. These are probably only rarely experienced *per se.* The late Professor Titchener's trained laboratory subjects probably came nearer experiencing simple sensory unlikes than any other living beings. Their attitude in the laboratory was entirely artificial. Why is it that in practical attitudes we do not experience sensations? This, no doubt, is because in practical life general curiosity nearly always cooperates with some special impulse and, whenever that is the case, the simple unlikes called sensations fuse indiscriminately with items of awareness bestowed by special conation. The term *fusion* is used here precisely in the sense in which Horace B. English has generally defined it: "Union of parts into a whole wherein the parts can only with difficulty or not at all be discriminated or in which the whole functions as a unit." [13] More specific meanings have been fitted into that general definition by different authors on psychology.

I have distinguished two conscious sub-acts of any mode of special conation, the affective sub-act and the cognitive sub-act. The former constitutes the experiencing of an affect indicating the nature of a need and the progress or regress in need-fulfillment; the latter constitutes the cognition of the ego-object-relation believed, if realized, to satisfy that need. It is important to note that the sensory unlikes symbolizing events in the interoceptor division of the afferent nervous system are likely to fuse with the experience qualifying the need, thus adding character to the emotions. This view is not contrary to older notions of affective experiences; it harmonizes particularly well with McDougall's compromise position to the Lange-James theory. McDougall believes that, though there is a common factor in all emotion (the awareness of conation or striving), the different emotions are qualified and individualized by their varying fusions with sensory experiences (Cf. Chap. VIII). On the other hand, it is equally important to note that the sensory unlikes symbolizing events in the exteroceptor nervous system as a rule fuse with the object of the (EO)-relation-to-satisfy the need. Some kinaesthetic and vestibular unlikes, symbolizing events in the proprioceptor part of the interoceptor system fuse not with the experience qualifying the need, that is to say, with the emotion, but, rather, like the exteroceptor sensations, with the cognized object of the (EO)-relation adding to the latter subtle spatial qualities. For instance, sensations arising in the eye-turning muscles because of the convergence of the lines of vision upon the object of visual concentration has been considered to give to that object the very gist of its depth property.

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[13] Horace B. English, *A Student's Dictionary of Psychological Terms,* p. 55.

The fusion of an exteroceptor unlike, rendered by general curiosity, with the object of the (EO)-relation-to-satisfy-a-need, rendered by special conation, is the very essence of simple perception; the act through which these two items of experience are fused is itself a relating act of the type of apprehension mode (C); that is to say, it is an act of relating or coordinating an object with another object. Thus, according to our hypothetical presupposition, it is a cognitive act urged by general curiosity. By virtue of the fusion described, the object of the (EO)-relation, which to begin with is an imagined object, becomes externalized; the imagined object comes to share the distance property of the unlike with which it has become coordinated or fused. In cases of false perception or illusion, the imagined object of the (EO)-relation fuses with an inadequate exteroceptor unlike. This means that the object externally projected when acted upon under its own guidance, instead of yielding satisfaction (proper adaptation), yields disappointment (failing adaptation). Despite that nature of illusion, illusion itself, as a phenomenon, offers the very best support of the theory of perception here suggested. Take the instance when travelers in a desert have been deprived of water for a long time. An unlike is sensed in the distance — it turns out on approach to be no more than the shadow of a rock-formation. Nevertheless, fusing with the imagination of water and perhaps food and, especially, with the imagination of the locale of these conveniences — all acts of imagination prompted by dire desire — the illusion issuing is the silhouette of the oasis. Or, to take another example: Certain mental patients are very apt to interpret completely innocent auditory unlikes, such as the hissing of the steam in the radiator, as the meaningful sound of threatening voices. This is current at a time when the patients are haunted by a strong fearful appetite which is continually generating imaginary objects in its support. The general principle evident in the case of the illusion would most likely be valid also in the case of true perception.

In the instance of the fusion which results in emotional individualization, general curiosity plays a double role parallel to the one it enacts in perception. It yields, on the one hand, the interoceptor sensory unlikes and, on the other hand, it achieves the fusion of these with that component of emotion which is contributed by the affective sub-act of special conation. That fusion, again, would consist in an act of relating one psychological object with another; here, however, one of these is an affective object, the other a sensory item. In this connection, it should be remembered that in the broadest sense of the term "psychological object" affects belong among these, being the products of the transitive act of *emoving*. Incidentally, the significance of the act of relating to one another affective and cognitive psychological objects becomes very conspicuous in aesthetic thinking; this shall be further examined later. No special comment is needed upon the case when proprioceptor sensory unlikes fuse with the object of the (EO)-relation. The role of general curiosity would be fully analogous with its role in the other two cases.

It might be noted that the hypothesis of general curiosity thus far exploited rules out the necessity for the concept of anoetic sentience, that simple mode of perception which according to McDougall and others antecedes any evocation of mental activity and thus always remains inconsistent with a systematic conational psychology. Instead it introduces the idea of a double motivation in all practical endeavor, a prompting of activity, on the one hand, by general curiosity and, on the other, by some mode of special conation, these two impulses being simultaneously excited by one and the same activating event in the physical continuum. In so far as cognition is concerned, general curiosity, then, yields the simple sensory unlike which takes the place of anoetic sentience. That unlike becomes meaningful through its fusion with the imaginary object of the (EO)-relation.

Animals on a pre-neural level have been observed to behave directedly toward spatially distant objects (viz., the amoeba pursuing its prey). The question, then, arises whether or not the sensing of unlikes, the intuition of (EO)-relations, and the fusion of the sensory unlikes with the objects of (EO)-relations occur in a very simple form on the pre-neural level. As a matter largely of aesthetics, I am inclined to endorse the affirmative answer; for, a positive answer would permit one to vision continuity and unity throughout life. Hazard that the so-called "extra-sensory perception" of which certain human beings seem to be capable — a mode of knowing which in recent years has been so intensively observed by my colleague, Dr. J. B. Rhine — be an atavistic mode of apprehension that these individuals share with, *e.g.,* the amoeba.

It seems highly probable that, at times when a special impulse is at work, events in the physical continuum would occur which, during a state of quiescence of conation, would call into play other impulses but which, during the surge of previously active conation, fail to do so. This, if it is true, would be explained by a drainage of energy. The collateral events assumably excite other special impulses but, at the very stage of incipient effervescence, the energies of these are drained into its own channels by the impulse at work. The resulting absorption (concentration) on the part of the latter of alien energy effects an enhancement of effort in the pursuit of its own goal. Due to drainage, then, the energies of the newly evoked impulses fail to radiate into affective, cognitive, and locomotive acts pertinent to their own purposes. The hypothesis of drainage of energy would seem unavoidably to presuppose collateral excitation of energetic units; for, the drainage of energy from one mental system into another could only be a drainage of active energy. Consequently, we have to assume that, at the moment of drainage, free energy is surging in the system from which energy is drained. In turn, the existence of free energy in a mental system collateral to the one towards which the drainage tends, is conditioned precisely by the activation of the former through some event in the physical continuum, the activation of a mental system or unit meaning nothing but the conversion of its potential energy into free active energy.

The application of the concept of drainage of energy to mental systems might seem little more than a pure metaphor — frequently scientific hypothesis *is* little more. That admitted, the theory of drainage, nevertheless, is an indispensable psychological hypothesis without which the whole conception of mental energy would become entirely sterile; on an earlier page, I have emphasized the necessity of some kind of energy hypothesis in psychology. The theory of drainage offers itself to the interpretation of a large number of psychological observations, particularly all phenomena that might be denoted as phenomena of concentration. For instance, it makes understandable the singular reciprocal relation between the three sub-acts of conation: the affective, the cognitive, and the locomotive acts.

The restriction of special conation to the function of one unit at a time does not affect general curiosity. General curiosity cooperates continually with special conation, being all along stirred by such collateral events in the physical continuum as are related in some manner to the special conation, perhaps particularly to the reactive event of its prompting. The following episode will illustrate the point. Once I occupied a room in close proximity to a printery. The printing press was operating day and night. During my first week of residence, the sound was disturbing, but soon I became so accustomed to it as no longer to pay it any attention. Now, I began to notice that, on the few occasions when the press stopped — this happened perhaps three times a month — the discontinuance of its sound gave me a jar and compelled my attention. In technical terms, the stopping of the sound had become an unlike of which I became aware through the reaction of general curiosity to a physical event. The stoppage, whenever observed, occurred during the earlier hours of the night when I was lying awake without anything important on my mind. In other words, the so-called "forced attention" to the change in the otherwise homogeneous background of sound experience took place when I was in a state of relative relaxation. On one occasion in the late afternoon, I was deeply engrossed in some writing of practical purport. All of a sudden, it struck me that the twilight interfered with my writing. I rose in order to light my kerosene lamp. In the middle of that nearly automatic act, I discovered that the printing press was not operating. I had no idea when it had stopped; I had experienced nothing of the usual jar characteristic of my experience when in a state of relative passivity. Since my major preoccupation had been with the task of writing, the discontinuance of the sound had remained unnoticed. In other words, while I was indulging an act urged by special conation (the writing), my general curiosity had not been evoked by the interruption of the sound and thus it had failed to render the customary unlike. On the other hand, my general curiosity had responded to another event vitally related to my conative effort, notably, the deepening twilight, interfering with my writing. The episode related illustrates, I believe, a general principle, namely that, while special conation is at work, general curiosity cooperating with the special conation is particularly likely to be evoked by physical events related to the reactive event of the latter, whereas it might fail entirely to act upon unrelated events.

These reflections will lead us to the understanding of the psychology of obstacles and means. Collateral events related to special conation might be of one or the other of two kinds. They might be events which in a purely physical sense counteract the reactive event of special conation, or, they might be events which in a purely physical sense further that event. Events of either kind, due to their activation of general curiosity, then become known in the terms of their own specific awareness symbols; more especially, they become apprehended respectively as *obstacles* and as *means.* The diagram used earlier to illustrate the interrelation of physical and mental events again allows us to clarify the situation here described. The lines (A) and (R) (Fig. 25), as always, stand respectively for the activating and the reactive event of special conation and the little disc to the left of the mathematical point of interaction for its two conscious sub-acts, the affective and the cognitive one. The arrow denoted as (O) represents some environmental event that, in a purely physical sense, counteracts the progress of the adaptive reactive event (R), whereas, the arrow denoted as (M) stands for some event in the environment which, in a purely physical sense furthers the progress of the reactive event (R). The dotted lines (a) and (b) respectively indicate that the physical obstacle and the physical means, being events related to the reactive event (R), become evocatives (activating events) respectively of general curiosity. That impulse, we have argued, in instances of practical conation, is called into play by physical events related to the reactive event prompted by some special impulse. Evoking general curiosity, these events become apprehended respectively as obstacles and means.

The primordial awareness of obstacles and means implied in the simple spontaneous insight into means-obstacle-end relation is probably an indistinct cognitive experience, a sort of diffuse archetypal intuition. In a sense, it is comparable with the immediate knowledge of the object of the (EO)-relation-to-satisfy a need prompted by an instinctive impulse. The acquired particularization of obstacles and means, alike the one of the object of the (EO)-relation, depends upon acts of recognition or simple apperception, that is to say, the differentiation of their more distinct properties is contingent upon past individual experience. Theoretically, this means that general curiosity stirred by obstructing or by aiding events in the physical continuum renders not merely the archetypal insight, but also, by relating the intuitive prototypes with items of the individual

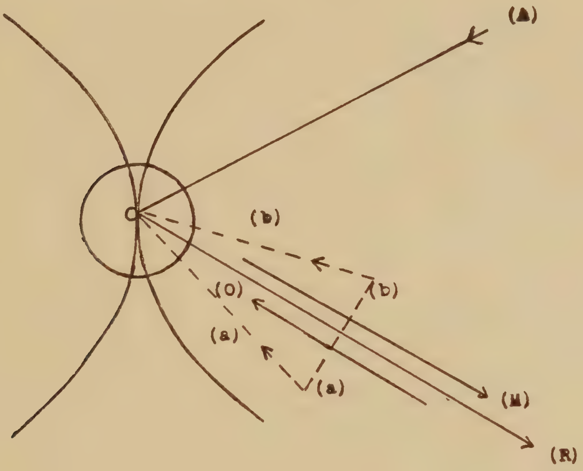

Fig. 25

memory-continuum, effects the enrichment of these by special properties of obstacles and means of the past.

Characteristic of the obstacle, the meaning-symbol of the physical event which counteracts the reactive event of a special impulse, is that it frustrates primarily the locomotive sub-act of the latter. This, in accord with the law of the reciprocal relation between the three sub-acts of special conation, leaves the self in a state of pronouncedly felt desire. In civilized human beings, however, general curiosity is immediately thrown into an intensive exploration of the memory-continuum in search of a solution of the dilemma. The decline of affective experience coinciding with enhanced planning is now due, not merely to a drainage of energy of the affective sub-act of special conation into the cognitive act of thinking the (EO)-relation-to-satisfy a need (this being the only cognition prompted by special conation), but, rather, to a drainage of a considerable portion of the energy of the special impulse into the channels of general curiosity; in cooperation the two yield a centrifugal-centripetal consideration of psychological items [apprehension mode (B)], by which intricate means of overcoming difficult obstacles are finally achieved as the result of a variety of acts of relating present with past and with future and past with future.

I have pointed out that the physical event (O) apprehended as an obstacle is an event that in a purely physical sense thwarts the reactive change prompted by a special impulse. Consequently, its meaning-symbol, the obstacle, even in its archetypal form, is actually an object-object relation, as are all relations the comprehension of which is prompted by general curiosity. More especially, it is the relation of a psychological object (O^1) to a second psychological object, notably, the complex one: (EO)-relation-to-satisfy a need. Thus, whenever during goal-seeking activity, an obstacle becomes known, we have to deal with two psychological objects, on the one hand, the $[(O^1)(EO)]$-relation or the obstacle-end relation and, on the other hand, the (EO)-relation. There are peculiar instances when the $[(O^1)(EO)]$-relation suddenly turns into an (EO^1)-relation. This is the case when the pugnacity instinct is evoked by the physical event comprehended earlier as an obstacle. This state of affairs probably represents a temporary discontinuance of function of the obstructed special conation and a coming into dominance of another impulse, namely, the impulse to destroy the obstacle. The psychology of that substitution is, perhaps, at present not fully understood, but the fact that the object of pugnacity might be any obstacle obstructing any one special conation at work speaks much in favor of considering the pugnacity impulse a general impulse on the same level as general curiosity and general deference, rather than one on the level of the special impulses.

I have called to attention, also, that the physical event (M), apprehended as a means-object, is one which, in a purely physical sense, furthers the reactive change prompted by a special impulse. Consequently, its meaning-symbol is again an object-object relation, notably, an [(M) (EO)]-relation. Thus, in the means-situation, we have also to deal with two psychological objects; in the first place, the one just mentioned, and, secondly, the (EO)-relation-to-satisfy the need of the special impulse.

I have remarked that there is a certain similarity, on the one hand, between the obstacle and the activated memory-disposition to think the course of failure of a past impulsive act and, on the other hand, between the means-object and the activated memory-disposition to think the course of success of a past impulsive act. The explanation of these resemblances is to be found in the fact that the constituents of each pair, respectively, are objects of belief, that is, objects endowed with deferent energy. That matter is to be given further consideration later. Pertinent to our present description of the role of general curiosity in practical cognition is its share in the apprehension of past failures and past successes as intrinsically consolidated but mutually separate events.

There can be little doubt that among the most important constituents of the individual memory-continuum are the dispositions to recollect total cycles of past conation, whether successful or failing. In the dogmatic associationist psychology of James Mill, life consisted in little more than one thing after the other. Accordingly, the memory continuum consisted only of an infinite succession of one idea after the other, a colorless flow lacking even the pulse of the simplest rhythm. James Mill was wrong because our life consists of conative cycles having a definite beginning and a definite end and our memories are memories of these conative cycles. To my knowledge, no psychologist has appreciated that there is a problem involved in the fact of our life and the memory of our life resolving themselves into conative cycles. I shall offer a theory to account for the internal adhesion of these cycles as well as for their disjunction from one another.

A total cycle of conation is a complex affair. It comprises every phase of activity prompted by a special impulse between the moment of the stirring of that impulse and the moment when, for the time being, it is brought back to quiescence. But the cycle includes more, for it also comprises any confederate operation of general curiosity from the moment of evocation of that impulse unto the moment when, for the time being, it regains quiescence. Whether or not the time of stirring and the time of requiescence of the two impulses coincide temporally we do not know. There is no compelling logical reason to assume particularly that the precise moments of their requiescence coincide, and there is fair psychological ground to believe that they do not.

The two conscious acts of special conation have been discussed. They constitute essentially the affective act of apprehending the nature of a need and the cognitive act of recognizing an (EO)-relation-to-satisfy that need. To know, as a unit, a total cycle of conation, involves conscious acts over and above these. It comprises: (1) the apprehension of the individualized emotion resulting from the fusion of certain unlikes, emerging when general curiosity is stirred by interoceptor neural events, with awareness symbols conceived in the function of the affective sub-act of special conation; (2) the perception of the projected goal-object resulting from the fusion of other unlikes, obtained when general curiosity is stirred by exteroceptor neural events, with the tributes of the cognitive sub-act of special conation; and (3) two peculiar modes of experience, viz., the experience of satisfaction and the experience of dissatisfaction or disappointment.

Whenever a purposive adjustment to an event in the physical continuum has been successfully accomplished, the living being enjoys a peculiar feeling of satisfaction (McDougall's "pleasure"). This quality of satisfaction, I suggest, has to be explained, not as yielded by the affective sub-act of the special impulse but, rather, by general curiosity sustained in activity by the change in the physical continuum effected by the germane adaptive act. As such, the satisfaction is an unlike symbolizing that change. There are instances when impulsive locomotive activity is not efficiently guided, but leads to failure of goal-attainment. When, in such instances, the reactive change has been accomplished, the emotion of desire takes on a peculiar quality that can best be described as dissatisfaction or disappointment (McDougall's "pain"). This quality (terminologically and, in a sense, psychologically, the opposite of satisfaction) is probably more complex than satisfaction, for in it there is still contained the emotion which is a component of the desire of a special impulse; the emotion that is now blended with an additional quality (X), never experienced alone. This (X) represents that which, strictly speaking, is the psychological opposite of satisfaction; for it is, I suggest, the unlike which obtains when general curiosity becomes stirred by the inadequate change in the physical continuum that has been prompted by the failing special conation. In McDougall's terms dissatisfaction would then become a blend of emotion with pain. He, himself, however, has nowhere indicated that evident fact. To him "pain" as well as "pleasure" are psychological ultimates that cannot be reduced to other terms.

Satisfaction and dissatisfaction enter into the apprehension of total cycles of conation, in the successful and in the failing cycle respectively. Finally, there enters into that apprehension the synthetic appreciation of the inter-relation of all the above-mentioned conscious components. I suggest, with reservation, for the case of a failing special impulse, that the interrelation in question cannot possibly be comprehended until the special conation has reached a stage of quiescence. That conjecture has a very simple logical-psychological ground; namely, that the individual components in the interrelation arise and become fully differentiated at different stages in the progress of the cycle — the awareness-symbol of the final adjustment appearing first after the adjustment has been accomplished. As the interrelation of the components cannot very well be appreciated until they all have attained their final distinction, the comprehension of their interrelation would seem necessarily to be performed in immediate retrospection following the completed adjustment. The act then in which the total interrelation of all the conscious symbols of the cycle of conation obtains — being distinctly an act of apprehending object-object relations — would be prompted by general curiosity functionally outlasting the moment of requiescence of the special conation or, in the case of a failing special impulse, the moment when, though not fully inert, the latter, for the time being, has discontinued to contribute any novel awareness symbols. As will be remembered, in the instance of unsuccessful conation, the final awareness-symbol, dissatisfaction, comprises the quality obtained in the continuing function of the affective sub-act of the special impulse still awaiting satisfaction.

I have submitted what I believe to be a possible hypothesis as to how cycles of conation become apprehended as units. As such, they are confined to the individual memory-continuum being, in all respects, the most important constituents of the latter.

There is a law concerning the activation of the individual memory-continuum which I have called *the law of affinity of cognitive dispositions.* It can be briefly stated as follows: Any important disposition to think a past conative cycle, is prone to become activated whenever the special impulse is again at work which originally prompted it. The ensuing review is one, not only of earlier successes, but also of earlier failures. The biological significance of this law becomes evident as soon as we call to mind that the memory of past success functions like a means, while the memory of past failure functions like an obstacle. The particular manner of relating present with past, stated in the law, is clearly an instance of apprehension mode (B), that is, the act of relating relata is centrifugal-centripetal just as any other act of relating means and obstacles to ends. Theoretically, then, the activation of the memory-continuum is prompted jointly by special conation and by general curiosity. Activation of the memory-continuum in accord with this law is not the only form which practical remembering might take; for during adaptive endeavor, a considerable role is played by simple, though purposively selective, recognition and by that type of apperceptive act in which obtains, on the one hand, the similarity of goals of one and the same special impulse and, on the other hand, the similarity of means potentially serviceable in the procurement of similar ends; implicit in a measure in the latter act is probably also the recognition of a similarity between certain types of obstacles. Acts of apperception of these two kinds furnish the foundation of all substitution whether of goal-objects by goal-objects or of means-objects by means-objects. Both practical recognition (reproduction by similars) and practical apperceptive synthesis (reproduction of similars) involve a centrifugal as well as centripetal relating of psychological objects and, accordingly, they have to be considered prompted jointly by general curiosity as well as by special conation. The acts are instances of apprehension mode *B*.

Selective recognition and selective apperception are acts which break up or, rather, transcend the great units of the memory-continuum, viz., the dispositions to think total cycles of past conation. For, in recognition as well as in apperception, we have to do not with a present endeavor that, as a whole, is related to past endeavors of similar kind, but rather, with a present object which is related to objects which, individually, might have had a function in a variety of past cycles of conation. The present object, however, is coordinated with the object of the past in virtue of their functionally similar position in great conative cycles. What is here true of the relating of present with past is also true of the relating of present with present. Similarity between simultaneously perceived things is a similarity depending upon their occupation of the same or kindred position in conative cycles. It is questionable whether in practical life a pure relating of present with present ever occurs, for it would seem that practical similarity between present objects, that is, similarity in the respects described, would not be apprehended unless, in some measure, past experience were incorporated in the viewing of the present. It is hardly worth stating that in purposively selective recognition, as well as in purposively selective apperception, the meaning of the objects recognized or apperceived might be contingent respectively upon acts of reproduction by temporal or spatial contiguity, as, for instance, when the dinner bell attains its meaning of being something to be followed by the serving of a meal, or when the perceived smoke is apprehended as something emanating from an object on fire.

I have discussed a number of practical cognitive acts in which general curiosity and special conation cooperate as the prompting agency. Seven of the most important of these were: (1) the act of perceiving or recognizing a goal-object, (2) the act of apprehending the individualized affect, (3) the act of apprehending a means-obstacle-end relation, (4) the act of apperceiving the similarity between the goal-objects of one and the same impulse; this act underlying all substitution of goals, (5) the act of apperceiving the similarity of means to similar ends; this act underlying all substitution of means, and (6) the act of activating the memory-continuum in accord with the law of affinity of cognitive dispositions; this act being conditioned by (7) the act of synthetic apprehension of total cycles of conation as unitary wholes. Any one combination of these seven acts might be utilized in simple inference as well as in the highest endeavor of practical cognition: the planning through reasoning of intricate means to reach an obstructed end (practical problem-solving). In simple deduction and in complex reasoning, these acts are applied to the prediction of future events and, thus, to the guidance of overt goal-seeking activity. In each, accordingly, are embodied both intricate centrifugal and intricate centripetal relating of objects with one another and with the self; each constitutes an act prompted jointly by general curiosity and by special conation.

CHAPTER X

THE LOCOMOTIVE SUB-ACT OF CONATION

THE EXPRESSION "locomotive sub-act of conation" refers essentially to the application of the body-tool of mind to the execution of adaptive locomotion in space under the guidance of the two mental acts: the affective act, and the cognitive act, respectively.

I have repeatedly referred to the body as the tool of mind. In that capacity, the body is not merely an executive tool through which locomotion is effected, it is also a receptive tool through which events in the environment are transmitted within the body to the mathematical point of interaction. The function of the body as a receptive tool is through its exteroceptor receptors and through afferent nervous process set up in these by environmental events. The function of the body as an executive tool is through efferent nervous process and its excitation of the skeletal muscles involved in overt motor activity — including certain physiological adjustments that promote efficient muscular vigilance. The selection of the tributes of the body, whether on the receptive or on the executive side, depends ultimately upon the inborn dispositions which constitute that link between mind and body which evolution established. Mind selects what is received and mind controls what is executed; this is merely a re-statement of our basic hypothesis of psychophysical interaction.

McDougall — influenced probably by his lifelong friend Charles Spearman — has examined what he calls the "native abilities" of man. He uses the terms "receptive" and "executive" abilities but, while the latter approximate the properties of the body as the locomotive tool of mind, the former become confused with the acts of cognition and are even termed, in some of their alleged manifestations, "cognitive abilities."[1] McDougall's confusion, I believe, is basically a confusion of the whole mind-body issue and of the interactionism problem. It would seem as if here, like in his postulation of anoetic sentience, perhaps unwittingly he still adheres to epiphenomenalism. For the sake of consistent systematic thought, it would be wise to insist that the concept of the body as a receptive tool of mind be reserved entirely for physical properties on its part, those properties, notably, which make possible nervous conduction from sense-organs to the mathematical point of interaction in the roof-brain (afferent conduction); also that the concept of the body as an executive tool of mind be reserved exclusively for those physical properties of the body which make possible efferent nervous conduction from the mathematical point of interaction to the skeletal muscles and to such glands and other organs as further muscular vigilance. If that view is unequivocally maintained, cognition and affection remain strictly mental sub-acts of conation; the guidance of locomotion by cognition and by affection also remains a strictly mental act. As a receptive instrument, then, the body is merely the transmittor to the mind of the physical activating event, whereas the guidance of locomotion by cognition and by affection is the mind's retroaction upon the body, that retroaction which determines the precise nature of the physical reactive event of adaptation.

McDougall — deceased in the fall of 1938 — did not live long enough to read Sherrington's inspired description of the embryological development of the human eye included in his fourth Gifford Lecture — delivered in 1938 but not published until 1941. During the major part of 1938, McDougall was an invalid after a severe operation for cancer. To me, who saw him slowly and painfully die in the course of that year during which he never left his home in Durham, North Carolina, it was evident that, despite never failing interest on his part, his reading of scientific literature and of the records of scientific events was highly restricted due to his weak condition. These biographical data are submitted in support of my surmise that he was not familiar with Sir Charles' Gifford Lectures.

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[1] Cf.: William McDougall, *The Energies of Men*, Chaps. VII & XXIV.

To Sherrington the human eye and its functions are definitely matters of the body-tool of mind. The eye develops in accord with the pattern of the species; it has an embryological history which falls entirely within the physiological confine, that is to say, within the realm of the energy-systems of the physico-chemical sciences. "The building and shaping of the eye-ball," writes Sir Charles, "and the establishing of its nerve connections with the right points of the brain, all those other things and the rest pertaining to them we called in chemistry and physics to explain to us. And they did so, with promise of more help to come."[2] Sir Charles is perhaps unduly optimistic in his unshakeable faith that the physico-chemical "enzymes" and "organizers" will some time account for all the details of embryonic growth. Unquestionably, there are remarkable experiments indicating the power of these, but, likewise, there are experiments indicating the reality of the simple conditioning of reflexes. Nevertheless, to say on the ground of the latter experiments that Shakespeare's writing of *Hamlet* were nothing but a complex series of conditioned reflexes would be a meaningless statement. Perhaps, the same would be the case if we asserted that the embryonic growth of man or animal depends entirely upon the complex intercommerce of enzymes and organizers. Sir Charles flatly rejects the entelechy of the vitalists.

The human eye in its cerebral setting, which grows in the darkness of the mother's womb, being ready — a perfect instrument of light-reception at the birth of the child — does not itself account for or explain even an iota of the mental act of visually perceiving. Here is how Sir Charles concludes his spirited essay upon the embryonic history of the human eye: "But . . . the 'seeing' by the brain behind the eye? Physics and chemistry there are silent to our every question. All they say to us is that the brain is theirs, that without the brain which is theirs the seeing is not. But as to how? They vouchsafe us not a word. Their negation goes further — they assure us it is no concern of theirs at all."[3]

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[2] Charles S. Sherrington, *Man on his Nature,* p. 129.

The last passage quoted is in complete harmony with the position here expounded. The function of the eye itself has to be kept distinct from the cognitive act of perceiving; *per se,* it tells us nothing about that mental act. To speak in general terms: the physical properties and functions of the body — the tool of mind — cannot be confused with any mental act of experiencing not even with the simplest one of sensing or of perceiving an unlike. If we adopt the concept of receptive and executive abilities, we have to vision these from the viewpoint of the two-substance hypothesis of mind and matter and, unequivocally, consider them material, not mental, facts. The logic of the philosophical position held by dualistic interactionism will otherwise become seriously jeopardized.

McDougall has offered some alluring reflections on the individual as well as on the racial development of the abilities, reflections which are pertinent to the view I have here defended although that view diverges from his own slightly ambiguous position. "The problem," he writes, "of defining the native abilities of man . . . is difficult . . . all the abilities, developing gradually during the active life of the child, become in various degrees . . . modified and extended . . . new abilities are formed by growth and gradual differentiation of pre-existing abilities; and the new abilities, even when fully differentiated, continue to function as parts of larger systems of which the parent ability remains, in each case, an essential feature. Thus the abilities which enable me to distinguish and recognize Tom, Dick, and Harry, respectively, are specialized differentiations of the ability which first enabled me to distinguish any human being from objects of all other classes . . . It seems probable that the abilities . . . closely allied in nature, are also phylogenetically allied, that is to say, have been differentiated in the course of evolution from some one primitive ability . . ."[4]

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[3] Charles S. Sherrington, *Man on his Nature,* p. 129.

If this is taken to mean that all the differentiated body-tools of reception, notably the differentiated sensory or perceptual fields with their individual anatomical receptors, have evolved from some one *sensus commune,* that is good or, at least, interesting speculation. The *sensus commune,* the pater-familias of all the differentiated receptive tools, would then, at some time, unfathomably remote in the past, have been the general receptive tool which, having conducted inleading event to some mathematical point of interaction, evoked the extrasensory knowing of an environmental object — that knowing perhaps directing purposive behavior toward distant objects. Since we have assumed that on the infra-human level — even down to the amoeba and certain plants — adaptive behavior is guided by experience, we have also assumed mind on that level. The concept of the body as a tool of mind has then its application throughout the kingdom of the living beings.

By confusing the bodily — purely physiological — functions of the living organism with mental acts of simple and complex cognition, McDougall inescapably arrives at the conclusion that biologically man is superior to all other living beings which is hardly true. This bias is supported by his selection for examinations of only such abilities in which man excels over most animals: for instance, his ability to walk erect, his manipulatory ability and above all his speech-motor ability.

There are unquestionably two abilities in which, by biological evolution, man is far superior to any living animal: the one is a purely executive, the other a receptive-executive ability. The executive ability is the one of putting the thumb of the hand against each one of the other fingers. That ability seems to be exclusively human; no primate shares it with man. It makes the human hand an immensely delicate instrument of manipulation; its role in man's creation of his extrinsic auxiliaries readily to be discussed can easily be surmised. Concerning that ability, McDougall writes as follows: "Man's manipulatory ability (or group of abilities) constitutes another very considerable superiority; especially his ability to oppose thumb and fingers in a nice fashion: for this becomes differentiated through exercise into many finer forms of skill. The reality of the native basis of all manipulatory abilities is brought home to us by the fact of natural right-handedness (closely associated with the special nervous basis of speech in the left side of the brain) and the closely allied fact that a small proportion of men are innately left-handed."[5]

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[4] William McDougall, *The Energies of Men,* pp. 99-100.

The second ability in which man excels over all animals — the ability which is at a time receptive and executive — is the one involved in the intercourse between men through articulated speech. On the executive side, it consists in a highly sensitive and articulate musculature for the production and emission of delicately organized sequences of air-waves, on the receptive side, it comprises subtle instruments of afferent reverberation to these air-waves. The roof-brain, the mind's great auxiliary in coordinating receptive with executive functions of the body, is sufficiently perfected only in man to make articulated language possible and useful. Some of us speak much but rarely listen; to those a conversation and a monologue are nearly selfsame. Others listen much but speak only little; to those a conversation is much like the audition of a radio-broadcaster's oration. The fittest among us do both, applying the receptive as well as the executive abilities of the body in social intercommerce through language. *Sic passim.*

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[5] William McDougall, *The Energies of Men,* p. 100.

Concerning our speech-motor ability, McDougall makes several pertinent remarks. "It is one of the mysteries of nature that the great apes, so similar to man in many respects, are divided from him by their almost complete lack of articulatory abilities. They have larynx, tongue, teeth, and lips not very unlike man's; but, in spite of the possession of the essential bodily organs of speech, they remain almost dumb, even under the utmost human efforts to cultivate their rudimentary articulatory abilities.

"This great difference between men and apes is undoubtedly due in part (though not wholly) to man's inheritance of articulatory abilities more various and effective than those native to the apes. It is true that each human language is a traditional growth developed through long ages and transmitted in the main from generation to generation by social rather than by biological inheritance. But we may infer with confidence that, if a group of young normal children were brought up entirely by dumb adults, the group would develop a rudimentary language of some sort by use of which their native articulatory abilities would become further differentiated and enriched . . .

"Man's appreciation of the finer shades of speech and of the whole range of musical impressions is founded in a complex group of auditory abilities . . . The reality and importance of the native basis of these abilities is brought home to us by the great differences between men in respect of 'fineness of ear', by wide differences in ability to distinguish and recognize the pitch of tones and their various relations. The same is probably true of the differences we find between a naturally good linguist and the man who finds it impossible to speak any foreign language passably well; and that between a man sensitive to the music of words and one wholly obtuse to it . . ."[6]

There is little reason further to quote McDougall upon those abilities in which the receptive aspect dominates, for, here is where the confusion of abilities with acts of cognition becomes too evident.

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[6] William McDougall, *The Energies of Men*, pp. 101-102.

If the body as a receptive and as an executive tool of mind is strictly regarded a part of the physical continuum and, consequently, its functions entirely physical events, then, in the comparison of man with animal, we get a picture of relative efficiency different from the one sketched by McDougall. As a bodily organism, man, in very many respects, turns out to be inferior to a variety of animals. That recognition is of vital importance because it brings into salience not the superiority of biological but, rather, of cultural man. The achievements from the time of prehistoric man to the time of civilized man has been, essentially, a cultural achievement: a cultural evolution which, so to speak, took over when biological evolution failed to keep up with the requirements of man's adaptation to the world around him.

As a general supposition, whenever man was inferior to animal in regard to the competence of the body-tool, man — far beyond any known animal — showed the genius of compensating for the deficiencies of his biological inheritance by the invention of extrinsic auxiliaries whether for reception or for execution. This superiority is essentially mental. An album of scattered examples shall follow.

Where failure in the perusal of a visual object obtained, man invented tools of improvement: the spectacles, the magnifying-glass, the opera-glass, and the telescope. These instruments made him capable of observing the unfathomably distant — even the far spheres of the astronomical world. Here, he infinitely surpassed the biological tools whether of the eagle or the vulture. But man also — in the service of his purposes — developed an auxiliary by which he could encompass the unfathomably minute: the microscope. In order to improve his body-tool as a receptor for audition, with equal ingenuity, he invented magnifiers of sound: from the ear-phone used by the deaf to the amplifiers that detect approaching air-armadas or submarines. This, so far, concerns man's invention of auxiliaries to aid, as instruments of reception, his biological body-tool. Any number of other instances, of course, could be quoted.

When we come to the topic of man's inventions in the aid of his biological body-tool as an executive auxiliary, the examples are nearly uncountable.

Consider the fact that man's muscular strength is far inferior to that of many animals. The gorilla tears a man to shreds limb by limb; no human being, however strongly motivated, could do that to another man. The elephant uproots large trees; no man could equal him. On the other hand, neither gorilla nor elephant could move Cleopatra's Needle, or our Statue of Liberty, or the one single block out of which was carved the roof of Theodoric's tomb in Ravenna; nevertheless, man has placed these monuments respectively where they are presently to be found. That achievement, however, was a matter of mechanical devise. The simplest of extrinsic man-made tools for lifting things was probably the lever to which primitive man applied his own muscular strength thus multiplying its efficacy; other mechanical devises followed, the block, the screw, the leaning plane and what not; and gradually man began to apply to these devices, not his own muscular effort, but instead the forces of inanimate nature, the gravitational force of the falling water being one of the first. Thus, man compensated by invention for his biological shortcoming in muscular strength and became, through the use of invented external auxiliaries, the most powerful of all living beings. There is a myth about the construction of the Egyptian temples — perhaps more than a myth. The edifice was conceived as a whole by its architect. As each gigantic building stone was put in place it was buried to its very brim in a sloping sand pile. The next block, by the utilization of the principle of the leaning plane, was dragged up the sand-pile and placed on the top of the first. And thus progressed the erection of the edifice. At its completion, it was entirely buried in a sand mountain. From the latter it was then gradually unburied and exposed in all its fullfledged splendor to the admiring inspection of man. If but a myth, a singularly appealing myth.

Many animals — like the gazelle — can locomove much faster than biological man. Nevertheless, our cultural area is called the area of speed, implying that now we can transverse space faster than ever before and faster than any other living being. How did we achieve motion in space far beyond our sheer biological abilities of locomotion? No chronological sketch of that history is intended, and here and there imagination has to step in where evidence is lacking. Perhaps, at some early date, man adopted as a tool of locomotion animals better fitted than himself to move speedily; perhaps a camel or a dromedary, or an elephant, or a horse. A mentally inferior species was selected as the extrinsic tool of more perfect locomotion. Some genius, some time, invented the wheel; the carriage became possible — the wagon that could be drawn by an animal speedier in locomotion than biological man (the chariot of the Greeks and of the Romans — drawn by horses). Much later, man invented an instrument of speedy locomotion, the bicycle. This was a relatively primitive devise; it utilized the principle of the lever to which man applied his own muscular strength. Proudly, he pedaled about, using his own body-tool, more especially, his legs to energize his performance. With the invention of the combustion engine, the bicycle soon matured into the motor driven bike. A variety of engines, through which the forces of inanimate nature could be converted into serviceable effects, caused the muscular strength of man and also the one of his domesticated animal servants to become obsolete for the practical purposes of locomotion; locomotion turned into passive motion in space. The horse-drawn stage coach was replaced by the "Iron

Horse," the locomotive pulling along a whole train of cars with a speed and efficiency never surpassed and becoming augmented further as the piston steam-engine gave room for the turbine and, later, the turbine for the dynamo. Alongside this development advanced the one of the automobile whose function to date is contingent upon the perfection of the combustion engine. These are some highpoints in man's achievement of speed. They all pertain to locomotion on the hard surface of the earth.

Man, by his biological inheritance is not adapted to spend much time on the surface of the water. It is true he could swim, but not very far and not very swift; Miss Ederle, who swam the English Channel, became a heroine in the world of sports. What did man do to compensate for a shortcoming which made him inferior to all aquatic birds? To begin with, he invented the canoe paddled by his own effort. Probably later, he invented the sail — having discovered that the winds could be utilized for the purpose of his passage on the seas. The canoe of the American Indian could not compare in efficiency with the sailing vessel of the Scandinavian Viking. Gradually all the machines used to improve the auxiliaries of passage on the hard surface of the earth were applied to the surface marine; we made steam ships and motor-driven ships, etc. Today we have "Queen Elizabeth" and "Normandy."

Man, by biological nature, is not a submarine animal. Some experts in submarine submersion, as a matter of a stage trick, have stayed under water without breathing as long as two minutes. I believe this is about the record. Fishes with their special design for oxygen-intake remain under water most of their lives. But man — in his inventiveness — designed the diver's suit with the aid of which he could perform prolonged labor under-seas; that is not all, he also invented the submarine craft through which he can tranverse submarine space nearly as well as the marine species.

Biological man was not made to fly in the air — even less so than he was to occupy the great primordial waters which, according to the biblical myth, subsisted before God created the world and man, the waters over which his spirit was suspended. Now man flies in the air. Indeed, flying in the air is his most economic expediency of transportation. Less than a hundred years ago, an imaginative Frenchman, Jules Vernes, wrote a novel entitled *Around the World in Eighty Days.* At that time the possibility of traveling around the world in eighty days was questioned. Now, by means of our aircraft, we circle the globe in some couples of scores of hours. In speeding through the air, an ability with which we were not equipped by biological inheritance, we have surpassed in efficiency all infra-human living beings.

Many animal species — including man — are predatory. They kill in order to secure their food — or, they kill not to become themselves killed. Predatory animals, with the exception of a few species who construct extrinsic tools for the sake of trapping their prey, apply directly their biological organism in the service of the purposes of killing. They use their bodily extremities in the pursuit of the prey or the enemy, and they use teeth, claws, beak, or what not as the instrument of slaying. No animal has developed extrinsic auxiliaries for the destruction of life that even approximates the ones invented by man. Notwithstanding his past mastery in destruction, man — in the course of cultural evolution discovered altruism even on a universal scale. This would seem a paradox especially since man's most eminent tool of destruction serves not the annihilation of the infra-human dangerous beasts of the jungle, but the one, rather, of his own fellow-men. Despite his high humane ideals, man has a tool-series of dire demolition that, at its peak, is as terrifying as the earthquake or the devastating flood. Whatever, in cultural evolution, lies between the wooden club or the clumsy stone-ax of primitive and the atom-bomb of civilized man is replete to make one shudder. It is supposed that, as long as the warming sun far out in our physical continuum sends its rays to our globe, life shall continue. Is it possible that, before the cooling of the sun, man himself shall have destroyed man — an act of willful suicide; or is it possible that man shall destroy his own civilization and that whatever remains of mankind shall have to begin anew the cycle: stone-ax to atom-bomb? In either of these cases, what is the sense of it all? Perhaps there is an answer. In my final metaphysical chapter, I shall venture one.

All the tools or auxiliaries, receptive as well as executive, that the ingenuity of man has invented to compensate for biological shortcomings, are tools extrinsic or external to his own body. To the more primitive of the executive tools he applies his own muscular strength, while into the more advanced of the tools he directs the energies of inanimate nature. The body itself, as a tool of adaptation, reaches a certain perfection in the course of biological evolution, the devices of the extrinsic tools constitute a progress in cultural evolution. With that in view, a question arises. Is there a complete gap between the two kinds of evolution, the biological and the cultural, or is there an overlapping of them? The question can be more narrowly formulated. Is the invention and manufacturing of tools exclusively a human achievement, or do infra-human living beings construct auxiliaries that are external to their own organisms? The answer is that some animal species actually construct such.

There is a species of wasp known to every entomologist who has been observed using a little pebble of hard substance as the means of flattening the mud-roof of the cave it has dug in the earth. Of course, that wasp does not manufacture its tool, it merely selects it from the great storage of nature's own factory. But, let us turn, for instance, to the spider. The spider spins a net in which it traps its prey. It is true, that the spider constructs the net from a glue emitted from its own body; nevertheless, the net ready, the spider can leave it and re-enter it according to the needs of the moment. As a ready product it is unquestionably a manufactured tool extrinsic to the body of its manufacturer. Spiders' nets — as cobwebs — might remain in hidden places during hundreds of years after their respective individual architects have perished. Another example: when Köhler's famous chimpanzees put together, one in the hollow of the other, two pieces of bamboo in order to obtain a stick long enough to reach the banana, the animals constructed a simple tool out of matter external to themselves.

The bridging of the gap between animals and men as tool builders becomes most evident when we consider the manufacture of the nest or home. A very large number of animal species, insects, birds, mammals construct homes or nests, whether as auxiliaries for self-protection or for the protection of the young. These homes or nests are built from matter outside the organism. The matter to be used is many times specially prepared and treated in order to make it efficient building material; the nest or home when ready is unquestionably an outside auxiliary created by the species. Why have we forgotten to consider the nest as such? If we do — as we properly should — then, we have to acknowledge that a very large number of animal species are tool-makers. From the examination of the tool-series, thus, we have no evidence upon which we can validly uphold the notion of a breakage in continuity between biological and cultural evolution. Perhaps we may be justified in maintaining such a gap from other viewpoints. In that connection it should be admitted that no animal has ever spontaneously manufactured any receptive tools of the kind that — in man — are exemplified by the telescope, the microscope, or the sound magnifier. It should also be admitted that while the animal executive tool — so to speak — is always "handmade" the human tools are frequently manufactured by the application of the forces of inanimate nature to the very production of tools (this would be the case when so-called machine-tools are used to produce other tools or parts of other tools). Furthermore, the new tool again might be one upon which is applied the forces of inanimate nature and so on in an infinite accession. Man's muscular or biological strength thus becomes increasingly obsolete in industry; manpower lacking on the home front, as in recent wars, women, though inferior in muscular strength, have been fully capable of taking over practically any kind of industrial work which used to be monopolized by men.

Let us consider another great man-made auxiliary. Articulated languages are inventions by successive generations of men. They constitute the great auxiliary in human inter-commerce and co-operation; they are also the tool that links generation to generation — thus, they serve eminently cultural progress, for, they are the very means by which the cultural inheritance is transmitted from fathers to sons. Each articulated human language utilizes the extremely subtle bodily abilities of the speech-motor organs and of the organs for sound reception. Does the appearance of language constitute a break between biological and cultural evolution? Not if we give to language the broad definition of being expressive vocal utterance that provokes receptive responses in other members of a species. Adopting that definition we would have to admit that many animals have a language which in a simple sense subserves the inter-commerce between members of a species.

It is a current notion in comparative psychology that the human language and its understanding originated from the diffuse emotional cry of infra-human beings and of primitive man, that cry which, though only barely articulated, nevertheless provokes the response of the individual of a species or of the group as a whole. It is interesting to observe that many vocal utterances of the higher animals have a timbre or a note that make them meaningful even to man. For instance, in many species, there is a triumphant note in the cry of anger, while in the cry of distress the tone is nearly like a simple melody in flat. Little children spontaneously begin to denote things by so-called onomatopoeias; for instance the child will call the dog the "bow-wow." Perhaps, the speech of a parrot is an onomatopoeia. The parrot perceives man and his speech. Possessing vocal organs making him capable of roughly reproducing human speech, he does so, but whatever he might say — like "dead men tell no tales" — might be merely an onomatopoetic denotation of the presence of recognized man. Be this speculation valid or not, in respect of expressive vocal utterances serving communication and cooperation, there is no strict break in the continuity of biological and cultural evolution.

Our examination of the locomotive-sub-act of conation exhibited man as the great inventor of tools and auxiliaries to serve his purposes. Its salience arose particularly from our insistence that the so-called receptive and executive abilities of man are exclusively properties of his body, properties which are the tributes of biological evolution. We had to admit that many animals are superior to man in respect of several of these abilities. But we were also compelled to recognize that man beyond any animal has been capable of compensating for bodily shortcoming by the invention of extrinsic tools and auxiliaries aiding reception as well as execution. These tools, like the body-tool itself are physical things and their application to any purposive endeavor is *per se* a physical event. The act of knowing in which the body-tool and all the invented receptive auxiliaries are instrumental, remains a mental act. The guidance of overt action utilizing the body-tool as well as all the invented executive auxiliaries likewise remains a mental act. The invention and construction of the tools, of course are themselves mentally guided acts. The question naturally arose: is man the only tool-builder? That question had to be answered in the negative. Incidentally arose another question: is man the only being that uses language? Again we had to disaffirm. The upshot, then, would seem to be that as far as tool-building and the use of language are concerned, there is no strict gap between animal and man. If we wish to express this finding in other terms we may say that there is no strict gap between biological and cultural evolution; that finding is of considerable metaphysical significance to be treated later.

Looking upon the matter from the other side, however, no one can possibly fail to note that, though some animals manufacture tools and use simple expressive language, man is infinitely superior to them both in the invention of ingenious tools and in the invention of effective articulate languages. Here, man's superior creativeness comes to the fore.

In conclusion, recall a few passages from the chapter which heralds this volume:

"In no literal sense do I accredit the Biblical myth of creation . . . What may be true, however, is that many great myths of man tell us something eminently important about man . . .

"Thus reads, on man's creation, the first chapter of Genesis. 'And God said, Let us make man in our image, after our likeness . . . so God created man in his *own* image, in the image of God created He him . . .

"What important message concerning man is contained in the great biblical myth? There are many, but the most salient one would seem to be that man of God's image shares with his prototype the power of creativeness. The biblical God, his very essence, was creativeness. That faculty was God's basic gift to man, his image. It shall be our task to substantiate, in the terms of present day psychology, that this be true. *Man's greatness and uniqueness is his creativeness;* not that he — like the biblical God — creates an organized world out of nothing but, rather, that by organizing and re-organizing that which exists he kneads the substances of nature into his servants . . . In that measure does he mirror the God of the myth."

The present chapter has amply supported the message of the myth.

CHAPTER XI

THE GROWTH OF THE PSYCHOLOGICAL SELF: (II) TASTE

A CHAPTER HAS BEEN earlier devoted to that part of the growth of the psychological self that we may properly call the growth of character. It concerned essentially the development of sentiments and the integration of the sentiments under increasingly dominating master-sentiments or ideals. The hierarchy of the sentiments is intertwined with acquired conative tendencies of a different kind, notably with the tastes.

Though the role of tastes in the civilized human adult is considerable, few psychologists have given heed to them. William McDougall, for one, has attempted a comprehensive treatment of the psychology of taste-formation. I shall briefly quote a few essential parts of his exposition.

McDougall in his most recent treatment of the tastes writes:[1]

". . . we acquire likes and dislikes for particular kinds of activity, and these are properly called *tastes* . . .

". . . sentiments are likings and dislikings for objects . . . While our sentiments determine the major goals towards which we strive, our tastes determine our choice of means . . . in pursuing those goals.

". . . Take the case of a youth who, on entering college, has a strong desire to distinguish himself. The desire springs from . . . his sentiment of self-regard. He . . . is ready to try . . . any one of the many possible lines of activity through which his goal may be attained . . . He tries several of these avenues, and finds himself efficient . . . in one of them, say debating. He then concentrates his energies along this line of activity; and for two good reasons . . . (1) he sees that this line of activity offers the best prospect of attainment of his goal, namely, distinction . . . (2) in so far as he finds himself an efficient . . . debater, he will enjoy debating, experiencing frequently the satisfaction of successful activity. Thus, in accordance with the fundamental law of feeling (that we tend to persist in and renew the forms of activity that are pleasant because successful) he acquires a taste for debating. When this taste has been acquired, his motive for debating is still his desire for distinction . . . but the choice of this means (debating) towards his goal is confirmed by his acquired taste.

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[1] W. McDougall, *The Energies of Men,* pp. 239-241.

"Suppose also that on trying several lines of athletic activity, he finds himself making good progress towards proficiency in one game, say tennis, while relatively . . . unpromising in others. He concentrates on tennis and, in so far as he continues to be successful in this game, he enjoys it and acquires a taste for it . . .

"Sentiments, then, . . . supply the motives of all sustained activities . . . Tastes . . . are not in themselves sources of desires; they determine, not our goals, but only our choice of means. If a taste is to be indulged, there must be some motive springing from some source other than the taste itself . . ."

Let me illustrate taste-formation by a few more instances even more conspicuous than the ones offered by McDougall. They are tastes developed in adult life rather than during adolescence. Suppose a woman likes company, that is to say, suppose that she has a strong gregarious instinct. Suppose also that she lives in a community where all women of her own social status, whenever they come together, play bridge. In order to meet other women socially she has to learn how to play bridge. She does so, prompted by her gregarious tendency. Bridge-playing is the means by which she can satisfy that tendency. After a certain length of time she finds that she is a very good bridge-player. That fact increases the number of her social invitations. But, finding herself a good bridge-player, she might develop a taste for the very act of bridge-playing. The goal which, to begin with, that act served to satisfy, then becomes less important; the activity, instead, becomes so to speak an end in itself and finally the woman finds herself enjoying in complete solitude the solution of all the bridge-problems presented in magazines on bridge. The social satisfaction she originally attained from the game has considerably abated and she might even prefer to be alone with her bridge-problems than to play bridge with the group. Another example, similar to the one offered. Suppose you have a very good fellow companion. You harbor toward him a genuine sentiment of friendship. Prompted by that sentiment you like his company, indeed, you seek it eagerly. Suppose now that your friend is very fond of playing chess. In order to be with him you learn to play chess and you challenge your friend to a game repeatedly. You are still motivated by the desire to be with your friend, a desire, springing from your sentiment of friendship toward him. Playing chess repeatedly with your friend you gradually discover that you are a very good chess-player. You might then develop a taste for playing chess for its own sake. Chess-playing is no longer a means to an end, namely a means to secure the company of your friend, it has become an end in itself; and now you like to solve all the chess-problems you come across in the journals on chess-playing; you exercise independently of any consideration of your friend your acquired taste for chess-playing.

The tastes here described differ in important respects. The taste for debating calls for the sagacious cognitive activity upon which swiftness of repartees is contingent, the taste for tennis calls for motor skill combined with keenness of perception and of spatial judgment; the taste for bridge is essentially a taste for cognitive activity and this likewise is the case with the taste for playing chess. Generally speaking, tastes proper might develop whether for cognitive activity, for motor activity, or for activity involving both cognitive discernment and motor skill.

McDougall's assertion that, since tastes are not springs of energy, the indulgence of tastes is always energized by some sentiment implies a theory which, on its face-value, might seem very attractive. Nevertheless, it is not the only theory. It would seem that all exercising of tastes serves a goal of its own, notably, *the escape from boredom;* the terms "taste" and "hobby" are nearly synonymous. The truth of this supposition will become evident when I call to attention a taste which has been forgotten not only by McDougall, but also by all other writers on taste, notably, the taste I have called *the taste for affect-gain.*

In an article of 1938,[2] I pointed out that a large number of people seem to seek affective excitement, as it were for its own sake. The reason why that plain fact of observation has not been associated with the psychology of tastes is probably that the sub-act of conation which I have called the "affective sub-act" has not been recognized as a transitive mental act. McDougall himself failed to achieve this realization and so — though he has discussed tastes more interestingly than any other writers — he forgot entirely that the desire for affective excitation for its own sake is exactly of the nature of tastes.

The term, "taste for affect-gain" which I have used to denote that taste is originally borrowed from the work of a prominent German psychiatrist, Ernst Kretschmer. In his excellent little monograph, *Hysteria,* he writes as follows:[3]

"A good example of the *mechanism of affective-gain,* as this typical hysterical process will be briefly called, is given by the following picture . . . An inmate of a neurological station has an attack and gets into a loud dispute. If the physician will appear on the scene about half a minute later, he will already find the little space around the patient filled with closely packed groups of fellow patients . . . They are the same persons who hardly an hour before had complained of anxiety and sensitiveness to noise, and who now . . . forthwith go to the noisiest place. What are they all doing there? . . . *They are loading up with emotional fuel which must continue to keep their reflex machine going."*

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[2] Helge Lundholm, "Taste for Affect-Gain," *Psychol. Review,* 45, 1938.

[3] Ernst Kretschmer, "Hysteria," *Nerv. & Ment. Disease Monog.,* 44, 1926, p. 61

Though the desire for affect-gain described by Kretschmer is superimposed upon a specific neurotic condition, nevertheless it has its ramifications in perfectly normal life and exactly in the normal taste for affect-gain.

McDougall's interpretation of tastes could be summarized in two brief statements:

I. Tastes develop for activities which have repeatedly served as successful means for goal-attainment.
II. As tastes are not springs of energy, indulgence of tastes is always energized by some sentiment.

On first view, both these suppositions would seem to make unpropitious any attempt to interpret the desire for affect-gain as a variety of taste proper. For, though affective experience qualifies goal-seeking activity — indicating the nature of needs and the progress or regress in the pursuit of goals — such experience can hardly be considered a means to an end in the same sense as effective planning through cognitive process (problem solving), or successful advance toward a desired goal through motor effort. With this consideration in view, how could a desire for experiencing affect develop in accord with the principle determining the development of tastes proper? Another difficulty in interpreting this desire as a variety of taste proper arises from the fact that, whereas tastes proper develop for activities which have successfully led to goal-attainment and which consequently are associated with the pleasure of satisfaction, the desire for affect-gain is not conspicuously a desire to experience pleasurable, but unpleasurable affect as well, such as grief, distress, fear, etc.

In summary, the seeming obstacles in interpreting desire for affect-gain as a variety of taste proper are two:

I. The apparent difficulty in finding a sentiment the satisfaction of which would be contingent upon affective experience *per se.*

II. The peculiar fact that desire for affect-gain, in so marked degree, embodies a desire for unpleasurable affective experience.

The observation that many people — perhaps particularly those of slightly neurotic disposition — seem to seek pain, physical or mental, and to secure satisfaction from painful experience, has been abundantly commented upon by psychologists and physiologists of the latter part of the nineteenth century. Many explanations have been offered; few have been remotely convincing. Unable to review this voluminous literature, I shall merely take up two suggestions that seem quite pregnant. Each one represents a distinctly psychological attempt to account for the satisfaction derivable from pain. They are both advanced by the Finnish writer Yrjö Hirn in his important volume on the origins of art.

The first of Hirn's suggestions is to the effect that any intensive affective experience — even a painful one — is always accompanied by an enhanced awareness of vital existence. Such an awareness, he thinks, is bound to be pleasurable. The rapture of enhanced awareness of vital existence, he intimates, might account for certain people's desire for pain. On this matter he writes: "In pain as in pleasure, in suffering as in voluptuousness, we attain a heightened and enriched sensation of life. The more we love life, the more must we also enjoy this sensation, even if it be called into existence by pain. Lessing . . . confesses to this taste in an interesting letter written to Mendelssohn: 'We are agreed in this, my dear friend, that all passions are either vehement cravings or vehement loathings, and that in every vehement craving or loathing we acquire an increased consciousness of our reality, and that this consciousness cannot but be pleasurable. Consequently, all our passions, even the most painful, are, as passions pleasurable.' And Helvetius has expressed almost the same idea: 'Accordingly, we shall desire, by means of constantly renewed impressions, to be at every moment reminded of our existence, because each of these reminders is for us a pleasure'."[4]

In the satirical novel by Anatole France, *The Penguin Island,* occurs the following anecdote which indirectly bears out Hirn's proposal. It is a travesty on Dante's *Inferno.* A young monk, Marbodius, like Dante, descends to Hell. Like Dante, at the gates of that most ancient of all estates, he meets Virgil who takes him to sites of interest. Just as he took Dante, Virgil now takes Marbodius to the place where are confined the old philosophers born B. C. Their abode is relatively comfortable. They were great, wise and good men, but being born before Christ they could not possibly come to the Christian Heaven. In Hell they are subjected to no torture except the torture of boredom. In conversation with Marbodius, one of these philosophers remarks: "Life in Hell is extremely attenuated, we feel neither pleasure nor pain; we are as if we were not."[5]

Hirn's second suggestion is to the effect that many painful experiences might be made a source of enjoyment by sentimental reflection; for instance, reflection upon the undeservedness of one's misery in view of one's great virtue, or any other reflection colored with self-pity.[6]

The validity of the second suggestion can hardly be questioned. Any psycho-pathologist has seen many instances of it; so has any student of literature. In an article of 1926, I called attention to patients in a non-retarded depression securing gratification of a morbid pride by proclaiming themselves at the very depth of misery.[7] The reader might recall a scene from Shakespeare's "King Richard III," in which three royal mothers — all bereft of dear relatives through the villainy of the Duke of Gloucester — actually compete with one another in grief, each one insisting emphatically upon being more miserable than the rest; each one evidently finding some satisfaction in having been more cruelly treated than the others.[8] The participants in this scene are: Elizabeth, queen to King Edward IV; Margaret, widow of Henry VI; and Duchess of York, mother to King Edward IV.

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[4] Yrjö Hirn, *The Origins of Art,* pp. 60-61.

[5] Anatole France, *Penguin Island: The Six Greatest Novels,* New York: Garden City Publ. Co., 1918, p. 69.

[6] Yrjö Hirn, *The Origins of Art,* pp. 51 and 60-64.

Q. Eliz. Ah! my poor princes! ah, my tender babes,
My unblown flowers, new-appearing sweets,
If yet your gentle souls fly in the air
And be not fix'd in doom perpetual,
Hover about me with your airy wings,
And hear your mother's lamentation.

Q. Mar. Hover about her; say, that right for right
Hath dimm'd your infant morn to aged night.

Duch. So many miseries have craz'd my voice,
That my woe-wearied tongue is still and mute.
Edward Plantagenet, why art thou dead?

Q. Mar. Plantagenet doth quit Plantagenet;
Edward for Edward pays a dying debt.

Q. Eliz. Wilt thou, O God! fly from such gentle lambs,
And throw them in the entrails of the wolf?
When didst thou sleep when such a deed was done?

Q. Mar. When holy Harry died, and my sweet son.

Duch. Dead life, blind sight, poor mortal living ghost,
Woe's scene, world's shame, grave's due by life usurp'd,
Brief abstract and record of tedious days,
Rest thy unrest on England's lawful earth,
Unlawfully made drunk with innocent blood!

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[7] H. Lundholm, "Constitutional Psychological Factors in Functional Psychoses; I: Manic-Depressive Insanity," *J. Nerv. & Ment. Dis.*, 64, 1926, pp. 125-143.

[8] W. Shakespeare, *The Tragedy of King Richard III,* Act. IV, sc. 4, p. 719, l. 9-41.

Q. Eliz. Ah! that thou wouldst as soon afford a grave
As thou canst yield a melancholy seat;
Then would I hide my bones, not rest them here.
Ah! who hath any cause to mourn but I?

Q. Mar. If ancient sorrow be most reverend,
Give mine the benefit of seniory,
And let my griefs frown on the upper hand,
If sorrow can admit society.
Tell o'er your woes again by viewing mine:
I had an Edward, till a Richard kill'd him;
I had a Harry, till a Richard kill'd him:

If we examine Hirn's two accounts of the pleasure of pain — hereafter we shall call them his *first* and *second principle* respectively — we find that they have one common feature which is of significance for affect-gain as a variety of taste. They both imply that painful affect might serve the satisfaction of an end, might, in other words, be a means to an end. What is this end? In the first case it is the pleasurable awareness of enhanced vital existence; in the second case it is the satisfaction effected by sentimental reflection colored by self-pity. None of these ends are purposes in a technical psychological sense. They can, however, by translation or re-interpretation, be fitted into a technical psychological system. As this is easier to accomplish with the second than with the first principle, I shall begin by examining the second principle.

Is it not true that self-pity embodies a subjective elevation of self-esteem, a gratifying flattery of one's own self-regard? The very essence of sentimental reflection colored by self-pity would seem to be the elaboration of one's own undeservedness of misfortunes encountered. Undeservedness of misery, in turn, would seem to be contingent upon a comparatively high estimation of one's own merit or virtue. Suffering might thus, through sentimental reflection, become an indirect means of gratifying self-regard; and some individuals might seek pain in order to secure such gratification.

Hirn's first principle reads: intensive affective experience —

including painful experience — always enhances one's awareness of vital existence; certain people might seek pain in order to enjoy the pleasure of this awareness. I suggest that the pleasurable awareness of vitality, also in such cases, is a pleasure arising from gratification of self-regard. Surely, it cannot be associated with the satisfaction of any one subordinate sentiment. It is contingent, rather, upon a subjective elevation of the total person. If, like McDougall, we consider the total person focused in a dominating self-regarding sentiment, the validity of my suggestion is strengthened. If this interpretation, which by no means gainsays introspective evidence, is accepted, we find a communal characteristic in Hirn's two principles, namely, that both the methods of deriving pleasure from pain, implied in these, succeed in so far as they are instruments of gratifying the self-regarding sentiment.

It is evident that recourse to painful affect-gain as a means of elevation is a weak human reaction bordering, in many instances, on the pathological. It is current among people who lack constructive purpose in life, or in people who lack courage to assert themselves by overt useful activity. In other words, we find it in men and women who would otherwise suffer from boredom or from inferiority feeling.

We have thus brought the desire for affect-gain into fairly close proximity to tastes proper. We have found that the experience of affect in itself might serve as a means of gratifying self-regard by escaping from boredom. As tastes in general develop for activities which serve successfully as means to ends, there is no logical reason why affect, which repeatedly and successfully has served the elevation of self-regard, should not become the object of taste.

However, a minor difficulty remains in giving desire for affect-gain full rank among the tastes, a difficulty arising largely from the meaning common usage has attached to the word, activity. While the word, activity, is commonly applied to thinking and to overt behavior, it is not as commonly applied to the experiencing of affect. This is a failure accounted for by the fact that common language oftentimes does not lend itself to adequate scientific description. From the viewpoint of technical phychology, *experiencing affect* — as well as *thinking* and *conducting* — is activity.[9]

Tastes proper all concern successful cognitive processes or successful overt conduct — whether in separation or in combination. If we acknowledge that the third process characteristic of conation, the affective process — like thinking and moving — is activity, then there is no logical reason why we should not class as a type of taste the acquired desire to exercise the process (or activity) of experiencing and displaying emotion, whether simple emotion or emotion complicated by feeling.

It might still be objected that affective process is not open to voluntary control, like thinking and moving. This statement is only partly correct. It is true that affective process is not as directly controllable by will as, for instance, the motion of a limb. Yet affective process may be intentionally instigated in indirect ways, namely by spontaneous imagination of exciting situations, or by spontaneous search for them. This matter will be discussed later.

There remains a difference between the tastes proper and the taste for affect-gain. The former arise from successful activities prompted by a variety of sentiments, while the latter, if my interpretation is correct, is always associated with the self-regarding sentiment. This difference, I believe, is only superficial. I suggest that — no matter what sentiment prompts the activity for which a taste proper develops — the acquisition of proficiency in any performance will always gratify the self-regard of the performer. If this is true, the indulgence of a taste is bound to be energized not merely by the former sentiment but by the total person as reflected in his self-regard. May it not even be true that any pleasure in sucecss, suffered by a human adult in whom impulsive life is integrated under dominating self-regard, must involve pleasure arising from the gratification of that sentiment? If my argument is valid, self-regard energizes not only the taste for affect-gain but also, in a measure, all the tastes proper.

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[9] Cf. Chapters VII and IX.

As a rule, it is far more difficult to trace the origin of a person's taste for affect-gain than to trace the origin of a taste proper. His discovery that affect — even painful affect — may yield satisfaction is contingent upon a variety of activities. For each individual the discovery has its own history. The precipitating events leading to the discovery can rarely be assembled around the function of any special sentiment, as in the case of the tastes proper; it is only after the discovery is made and the taste formed that we can definitely associate the latter with the self-regarding sentiment.

In discussing the taste for affect-gain, I have centered my attention upon taste for unpleasurable affect. This I have done for two reasons: (1) intentional search for pain constitutes the most conspicuous form of taste for affect-gain, (2) this variety of taste for affect-gain constitutes the most difficult problem of the topic under survey. The problem of taste for pain once solved, the taste for pleasurable affect-gain requires no explanation of its own. It is easier to understand, being evidently accounted for by Hirn's first principle. Hirn's second principle is obviously of no significance in the formation of taste for pleasurable effect.

In what manners can a person voluntarily indulge his taste for affect-gain? He can do it by exposing himself to exciting situations. This, in turn, he can achieve in two ways: (1) on the level of reality, and (2) on the level of unreality. In other words, he can seek exciting situations in real life, or he can seek such situations in imagination. Both methods are used, sometimes in separation, sometimes in combination. The sentimental reflection, constituting Hirn's second principle, practically always involves the accentuation of affect by continual imagination of painful situations.

When a taste for affect-gain is indulged on the level of reality, the exciting situation sought is frequently one in which affect is sympathetically induced by the observation of affective conduct (including vocal utterance, gesture, and mimicry) on the part of others. (Exceptions to this rule occur as will be seen later.) This has an interesting explanation.

By definition, a pure taste for affect-gain does not incorporate liking for the cognitive activity and the overt motor activity which, in normal life, serve the satisfaction of needs the nature of which are often-times indicated by the affect (as in the case of emotions). Consequently, whenever a person — for the sake of indulging his taste — seeks an exciting situation, he does not seek one in which his welfare requires adaptive cognitive activity or adaptive motor activity. He seeks, rather, a situation which offers him safety at the same time as it strongly stirs his affects. These criteria are well satisfied by situations in which overt emotional conduct on the part of others can be observed and permitted to excite affect sympathetically. As long as the observer himself is in safety, his sympathetically excited conation needs not express itself otherwise than in the experiencing of affect, all his energies being, so to speak, drained into affective process.

> When storms blow loud 'tis sweet to watch at ease
> From shore, the sailor laboring with the seas;
> Because the sense, not that such pains are his,
> But that they are not ours, must always please.[10]

The restriction in the choice of exciting situations on the level of reality, does not apply to the level of unreality. In indulging his taste for affect-gain on the latter level, a person has unlimited liberty. There is no imaginary situation — even of the most severe personal jeopardy — that might not be utilized in the pursuit of affect-gain.

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[10] Titus Lucretius Carus, "Suave Mari Magno," (trans. W. H. Mallock); *An Anthology of World Poetry* (ed. Mark Van Doren), New York: Albert and Charles Boni, 1929, p. 358.

Taste for affect-gain might be disclosed upon very different levels of dignity. In fact, if we admit the aptness of applying to human activities a scale of dignity, such a scale can be applied to the large variety of manifestations of taste for affect-gain. Between the extreme ends of this scale falls a wide array of expressions of the taste, some pathological or near-pathological, others normal. Though it is difficult to place each type upon a precise point of the scale, and though individual opinion might differ as to the relative placing, I shall venture briefly to describe — in an ascendent series — a number of manifestations of taste for affect-gain. Before I proceed further, however, a general comment on the pathological forms of this taste is in place.

Whenever desire for affect-gain appears as a symptom in a curable mental disease, it may not be fair to speak of a taste for affect-gain. For, in such instances, the desire is likely to vanish with recovery. The desire for affect-gain, then, characteristic of some patients suffering from agitated depression, should not be called a taste. The same would be the case with the desire for affect-gain described by Kretschmer and quoted in the beginning of this article. In this instance, the desire is contingent upon a specific hysterical condition. Recovery might here, as in the case of agitated depression, completely remove the desire.

The situation is quite different in cases of psychopathic inferiority in which a desire for affect-gain tends to develop into a chronic condition. Here, it is not contingent upon any curable mental disease, but upon an inborn defect for which there is no remedy. Take, for instance, the type of psychopath known as the *wanderer*. He is described as a restless person who cannot remain in the same abode without boredom. As a consequence, continually and aimlessly, he tramps around from place to place, never being able to apply himself to any useful constructive enterprise. He seeks salvation from boredom in the thrill of travel. The thrill offers him the elevation of whatever he may possess of self-esteem (Hirn's first principle). Other psychopathic forms of thrill-seeking are probably of similar psychological main-spring. In instances of this kind I would hesitate less than in the acute cases to speak of taste for affect-gain.

In the survey of different varieties of taste for affect-gain I shall use two expressions which I wish to define before applying them. They are: *sympathetically excited affect* and *directly excited affect.* The former refers to affect evoked through passive sympathy.

Lowest on the scale of dignity of all tastes for affect-gain I would place the desire to watch cruelty exerted upon the defenseless, be he man or animal. Affect-gain in observing cruelty is secured through sympathetic excitation of fear and distress and, in rare cases — paradoxical as it may seem — through directly excited pity. The Romans of the period of decline excelled in this taste when they attended performances in which defenceless men and women were tortured and killed in the arena. Nearest, in modern times, to the Roman arena-performances come, no doubt, the Spanish bullfights.

Akin to, though higher than the taste for cruel performance, is the taste for attending fair, but dangerous, fights and athletic games; also risky circus-acts, etc. Affect-gain is here secured through anxiety of expectation, directly excited admiration, and, in case of injury to performers, through sympathetically excited distress and, sometimes, through directly excited pity. All these affects are sympathetically reenforced by the affective gestures and exclamations on the part of other spectators. Even athletic games which are fair and perfectly safe serve people as instruments of indulging taste for affect-gain. There are persons who enjoy attending games although they do not know the rules.

They are incapable of directly excited admiration and their affect-gain is entirely a matter of sympathetic contagion. They will frequently tell you that they go to a game in order to hear the people cheer. The affect-gain from watching athletic games is intensified in people who bet upon a party or an individual. Betting accentuates the anxiety with which the game or race is attended. All gambling secures part of its fascination from the fact that it effects affect-gain. Affect-gain may not be to everybody the most important factor in the enjoyment of games. However, I believe that comparatively few enthusiastic attendants of games fail to derive some enjoyment from affect-gain.

Some people enjoy games as experts; they know all the rules and they can consequently appreciate the skill of the various performers in the game but, this is not true of all of us. I vividly recall my first attendance of an American foot-ball game. It happened to be the Harvard-Yale game of 1919. I had not the slightest idea of the rules of the game and the whole performance seemed to me rather ridiculous: all the people running towards one another, landing up in a jumbled heap of limbs and torsos. Despite my ignorance I had a very, very good time. The excitement of the crowd excited me and I profoundly enjoyed my sympathetically aroused affect-gain. By a singular mistake I was placed on the Yale side of the stadium although at that time I was a post-doctoral stipendiary at Harvard. Consequently, I cheered more with the Yale allies than with the Harvard people. I mention this particularly in order to indicate that university loyalty did not enhance my enjoyment.

Next to cruel taste, at the lower end of the scale of dignity, I would place the taste for affect-gain commonly called scandal-hunger. The scandal-hungry enjoys his own moral indignation. He is frequently the carrier of gossip and, in gossiping, he is likely to magnify scandalous rumor. Gossiping, whenever a responsive audience is found, reenforces his moral indignation through retroactive sympathetic contagion from the indignant group. This taste is often found in spinsters without occupation whose maintenance depends upon charity or upon the kindness of relatives. Affect-gain, by elevating their self-esteem, saves these unfortunate mortals from ennui or feeling of inferiority. H. C. Andersen, the Danish author of fairy tales, has written a story about this very tendency of taste for affect-gain. It is written with his typical mild and good-natured humor. It is given in the style of the fable: the gossip and rumor-mongering of the birds around an originally trivial event in the hen-house. Through the excited review by many reviewers, it grows into what one might call a headline scandal in the world of the feathered ones. It is a very short story and "It's Quite True." We wholeheartedly recommend it to the reader.[11]

Scandal-hunger is a variety of a wider type of taste to which belongs also the cruel taste. Most broadly defined this taste might be characterized as a general taste for observing sensational events. Another variety of this taste is to be found in people who swarm to places where an accident is indicated in order to enjoy sympathetic distress, or who board their vehicle in pursuit of the fire engine in order to take advantage of the opportunity to enjoy anxiety and possibly sympathetic distress and fear. These individuals like to read in the daily papers and elsewhere about train- and ship-wrecks and about the cruelties of warfare. The taste might also express itself in indulgence in cheap horror-fiction; in other instances, in frequent visits to the horror-chambers or anatomical sections of wax-museums, even in a liking to watch operations, deliveries, and executions whenever an opportunity is offered.

A taste for affect-gain different from the ones described, though not much higher in the scale of dignity, is the taste which expresses itself in continual complaint about misfortune and misery. It is essentially accounted for by Hirn's second principle. In other words, it is a taste for securing self-esteem through self-pity sustained by sentimental reflection. There are three factors involved in the indulgence of this taste: (1) sentimental reflection which fosters self-pity, (2) re-enforcement of self-pity through retroactive contagion from a sympathizing group, or, in case the group is cold and unsympathetic, enhancement of self-pity through newly stirred sentimental reflection, and (3) direct elevation of self-esteem through attention paid by sympathizers, an attention that otherwise the "sufferer" would fail to attract. It is quite possible that the development of this taste is contingent upon a certain weakness of urge, the weakness that produces a dependent type of adult — in men, the *sissy-type;* in women, the *clinging-vine* type. In extreme instances of chronic complaining, where the taste becomes near-pathological, this supposition is even very plausible. Though milder in its expression, this taste has a certain similarity with the tendency to complain shown by many patients suffering from a non-retarded depression. The taste is frequently found in women bereft of husband and children, or in childless widows; in other words, in people who have lost the object of their dominating sentiment and have failed to find new constructive purposes in life.

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[11] Hans Christian Andersen, *Fairy Tales and Wonder Stories,* New York: Harpers, 1914, pp. 380-82.

The widowed royal mothers in "Richard III," who emphatically compete with one another in grief, offer a good illustration of the taste we are considering. Mrs. Gummidge, in Dickens' "David Copperfield" is another instance of the same taste. Mrs. Gummidge is a childless widow. She has felt the pangs of deprivation and loss of purpose in life. Being without means, she has had to accept the continual hospitality of Mr. Peggotty. She feels the inferiority of her position and as a compensation she develops a taste for complaining. Her complaint leads to attention being paid her, her self-pity is thus enhanced, her self-esteem elevated. The remarkable feature with Mrs. Gummidge is that, when circumstances force upon her responsibility and the necessity of constructive purposive action, her taste for affect-gain through self-pity vanishes, and she becomes the capable head of Mr. Peggotty's household.

No matter which one of the tastes for affect-gain so far discussed one considers the highest, between it and the most dignified variety of the taste there is a large gap.

While taste for cruelty is the basest of all desires for affect-gain, the most dignified expression of such desire is to be found in the taste for aesthetic enjoyment.

The psychology of aesthetic enjoyment is a huge and very difficult topic, the full treatment of which would require a volume of its own. Here, I can only briefly indicate its nature. In so far as great emotional art and sentimental art have an affective appeal, and in so far as experienced affect is a component in aesthetic enjoyment, affect-gain is a factor in appreciation, and love of art a variety of taste for affect-gain. But, no true aesthetic enjoyment is merely the enjoyment of affective experience. In all true art-appreciation there enters a cognitive activity, the apprehension of the abstract or purely formal relations inherent in the art-object. Success in this cognitive activity brings a satisfaction of its own which is part of enjoyment. A proper balance between the affective and the cognitive processes conditions what is called *aesthetic* or *psychic distance* in art. Undue prevalence of the former is likely to break the distance and has to be counteracted by an adequate measure of the latter. Oftentimes this is spoken of as the necessity of balance between emotional and formal appeal. The range of affects which might enter into aesthetic enjoyment has no determinable limit. Perhaps every affect a human being is able to suffer might be a constituent in the experience of beauty.

My surmise is that all affect that is part of art-appreciation — except the pure pleasure of successful apprehension of abstract relations — is sympathetically excited. In other words, an art-object induces affect in so far as (explicitly or implicitly) it stands for, or symbolizes an affective gesture, the latter term taken in a broad sense. The defense of this theory is such an elaborate task that I cannot undertake it here.

In view of the fact that the indulgence of a taste for affect-gain requires a certain measure of overt activity, such as throwing dice (in the case of gambling), open complaint, singing and praying at funeral or revival meetings, etc., some one might claim that the taste for affect-gain is merely a taste for these activities and thus of the nature of tastes proper. This, to my mind, would be an absurd misplacement of emphasis. I would insist that taste for affect-gain is a species of its own to be recognized along with the tastes proper.

As a whole, the scale of dignity of tastes for affect-gain occupies, in a way, a lower plane than the corresponding scale of tastes proper. This should not be understood to exclude the overlapping of the two scales. For instance, I would unhesitatingly place the aesthetic taste above a taste for fox-trotting. On the other hand, I would never place even the most refined aesthetic taste on the same level of dignity as a taste proper for just acts, sprung from a genuine sentiment of love of justice.

CHAPTER XII

THE CONATIVE ASPECT OF BELIEF

ATTENTION HAS BEEN called to the fact that the irrefutable common sense notion of purposive locomotion being guided by mental acts of experiencing, constitutes a psychological problem that no psychological science with *amour propre* can possibly evade. It is my intent to offer a hypothetical interpretation of that most evident of all facts: the guidance of purposive endeavor by experience.

The current definition of the act of believing is as follows: to believe in something is to assert its reality or independent existence. If we adhere to the sound principle of using the verb to denote an act and the noun to denote a structure or enduring disposition, we logically arrive at a definition of "a belief." A belief is an enduring disposition to think a psychological object and, coincidingly, to assert its reality or existence. The term *cognitive psychological object* — as we may recall — is used in the very wide sense of anything that the human mind can think in a synthetic or unitary fashion — be it the typewriter on which I write in this very moment or the relation between our globe and the moon in the ebb-and-tide phenomenon.

The human mind admits an extremely complex configuration of such dispositions. As McDougall writes: "The structure of every developed mind comprises a multitude of beliefs. Many of these concern particular things and events; these are either isolated or hang together merely in temporal sequence or spatial systems. When we speak of a man's beliefs, we usually mean beliefs of a more or less general nature; in every normal human mind, these are in some degree organized in systems. In the highly organized mind that we call scientific intellect, this organization renders most of the general beliefs coherent and reciprocally supporting, like the stones of a dome of masonry."[1]

Is a belief merely a cognitive disposition? The current definition of the act of believing, notably: to believe in something is to assert its reality, suggests that the unit of structure underlying this act is more than a disposition to think the object. There is one further psychological, and one logical reason to assume that a belief is more than a disposition to think. The former is the undeniable fact that beliefs guide conduct.

It is surprising that scientific writers who have recognized this not merely as a lay fact of common sense, but as a scientific psychological challenge, have, nevertheless, shelved the problem offering no explanation or even attempt of explanation. Thus, for instance, writes James Ward: ". . . As regards action, much has been written about the effect of belief upon it; and yet all that is of essential importance is very simple and very obvious. A sane man, even an insane one, unless his disease is apathy, acts as he believes. He may indeed venture to act in cases where he is uncertain, but his venture is always backed by some belief and never diametrically opposed to all his beliefs. Of course we may believe with complete certainty without at once acting or even resolving to act later; yet the efficacy of such belief, always holds good potentially, and will shape our actions whenever it is relevant . . . 'Faith without work is dead' we say and we distrust a man who has not the strength of his convictions. This strength or intensity of conviction, however, is not to be confounded with the certainty of belief: it is the practical consequence of — the 'confidence' begotten by — this certainty, and therefore presupposes it. But if the subject, who is convinced, were merely a 'logical ego' and nothing more, these secondary emotional and practical consequences of belief, which make it a living fact, a complete 'state of mind', would be non-existent."[2] With this Ward's discussion terminates. He submits no further comments in explanation of one of the most important phenomena of human conduct; neither, to my knowledge, do any other psychologists.

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[1] William McDougall, *Outline of Psychology,* p. 414.

Prior to Ward, Alexander Bain, the great associationist psychologist of the middle of the past century, had forcefully proclaimed the energetic character of belief. He defined belief as "preparedness to act." In his essay on belief, appended to his large volume *The Emotions and the Will,* and probably constituting one of the best things he has ever written, he asserts:

"Preparedness to act upon what we affirm is admitted on all hands to be the sole, the genuine, the unmistakable criterion of belief. Columbus showed his belief in the roundness of the earth, and in the existence of an unbroken ocean between Europe and the east coast of Asia, when he undertook his voyage . . .

"The readiness to act is thus what makes belief something more than fancy. We act upon very imperfect knowledge, but that knowledge must be believed by us. We may have perfect knowledge without acting on it; much of our highest theoretical knowledge is seldom reduced to practice. The reason is not want of faith, but want of opportunity. The preparedness to act is still the only test of this highest kind of knowledge . . .

". . . in the pursuit of our ends, if we work as strongly for the means, as we do for the ends, we have a perfect confidence in the connection of the two. Our belief that money will feed, clothe, and otherwise gratify us, is proved by our working for money, with all the force of our wish to be fed, clothed, and gratified. A sick man has little faith in remedy, if he will not take all the trouble to procure it, that he would do to be made well . . .[3]

Literary statements upon the general energetic character of belief can be found in abundance. I have quoted many in my book of 1936, *The Psychology of Belief.*[4]

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[2] James Ward, *Psychological Principles,* pp. 353-354.

[3] 3 Alexander Bain, *The Emotions and the Will,* 3d Ed., New York, Appleton, 1876, pp. 505-510.

I suggest that the most plausible explanation of behavioral guidance in general be that guidance consists in the influence of impulse upon impulse, more especially in the checking or correction of behavior urged by one impulse through the influence of another. If this general conception of guidance, which represents the extreme conational interpretation, is valid, then it follows that a belief in action must signify an independent mode of conation that can effect the correction or the promotion of other impulses respectively. A belief, then, would be more than a cognitive disposition, for it would be a potentially energetic unit of mental structure: *a cognitive-conative disposition.*

The logical reason for assuming that a belief is more than a cognitive disposition springs from the fact that all objects of belief, that is, all psychological realities, constitute a category of things recognized by man to be similar in the important respect of being real.

In an earlier chapter, I have briefly discussed the act of apperceptive synthesis or of apprehending similarities. This act leads to the grouping of psychological objects into categories of things. Each thing of any one category was characterized by the fact that it entered as the object of the (EO)-relation-to-satisfy the need of one and the same kind of special impulse. In other words, the sign of similarity between the various objects of any one category was its relation to the same mode of special conation.

If it is generally true that, naively, the similarity of psychological objects, comprehended as alike, is due to their common relation to an impulse, we would expect that all the psychological objects which share with one another the property of being real should also naively be coordinated with one another by their common relation to some determinable mode of conation. The fact that the category of things known as realities is a very inclusive one, comprising the majority of things known, would not, logically, be hostile to such an expectation. This consideration, then, urges us to search for the mode of conation with which belief is allied.

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[4] Cf., *Op. c.*, Chapter XIII.

A priori, we can eliminate any special conation: instincts or sentiments. The latter are the very types of impulses that make cognitive objects fall into groups far less comprehensive than the category of realities. We can also rule out general curiosity, because that impulse, by definition prompts merely the apprehension of object-object relations. It could not possibly be the type of conation that gave to the majority of psychological objects the common property of being real; even less could it account for the variety of other emergent categories such as edibles, lovables, curiosities, virtues or vices.

It has been remarked that the category of things denoted as realities, is widely inclusive, comprising the major part of all cognitive objects apprehended. From this we may infer that the conation yielding the meaning of reality must be one that dominates mental life in a very broad sense; indeed, it must be equal to general curiosity as regards wide-reaching significance. I have suggested that the conation in question is a primordial or general impulse which we might call the impulse of *general deference,* and which, together with primordial curiosity might be regarded as the most fundamental and broadly significant of all impulses; perhaps, the tendency of primitive passive sympathy, alone, would compete with them in wide-reaching import.

The postulation of a general impulse of deference does not constitute a multiplication of hypotheses; for, just as general curiosity was no more than a re-definition of the instinct of curiosity, general deference is nothing more than a re-definition of the self-submissive instinct. According to McDougall the instinct of self-submission is distinctly a social instinct. It is provoked by dominating behaviour on the part of other members of one's species. There is no imperative necessity to consider self-submission in that narrow frame of reference. We might perfectly well recognize a submission or deference to wider situations than the social one. If we do endorse the concept of general deference, the social impulse of deferring to dominating fellow-men becomes a special sentiment split off from the general tendency.

I suggest that all adaptation of living beings is of one or the other of two kinds with allowance for compromises. These are, on the one hand, deferent adaptation and, on the other hand defiant adaptation through control. The former, broadly speaking, consists in the adjustment of the organism to an environmental event; the latter, in the adjustment of an environmental event to the organism. The following simple simile can be used in order to illustrate the two respective acts. A child, wanting an apple, might stretch his body to the utmost in order to reach it; this would be comparable with deferent adaptation. But, the child, in order to reach the apple, might also bend the branch upon which it is suspended until it is easily accessible — that act would instance defiant adaptation or adaptation through control.

Throughout the animal kingdom, the number of adaptations through control, as compared with the one of deferent adaptations, is like the figure (1) to an astronomical figure. Superficially, man might seem to be able to exert a considerable control of the physical world; yet a closer consideration reveals that what is actually controllable is merely an infinitesimal fraction of the events in the physical continuum; what, in turn, is controllable by the infra-human living organisms is merely a minute fraction of the domain mastered by man. The truth of these reflections, is brought into relief when we consider events in the physical universe, such as the diurnal cycle of day and night, the annual seasonal cycle, or processes such as those determining the chemical composition of the atmosphere of the globe, and what not. All these events and processes are occurrences in the physical continuum to which living beings are able to adapt themselves only by deference. In view of these considerations, it would seem biologically natural that, in the evolution of life and of species, there would emerge a dominant tendency of deferent adaptation: a strong primordial impulse of general deference.

Primordial or general deference, like primordial curiosity, is called into action by events in the physical continuum. The two impulses are always evoked together, both cooperating with special conation whenever a special impulse is at work. Primordial deference yields to the meaning symbols of complex mental activity the attribute of reality. In all practical conative endeavor, we have accordingly to figure with at least a triple motivation: motivation by some special impulse, motivation by cooperating general curiosity and motivation by cooperating general deference. That cooperation, exclusively, gives to the locomotive or reactive event which it guides the subtle and effective adaptive property. The situation can be clarified by a reference to our basic diagram of man's place in nature (Fig. 26).

In this figure, again, we recognize the activating event (A) and the reactive event (R). The three little discs in the individual part of the mental continuum: (S), (G) and (D), adjoining the mathematical point of interaction, respectively stand for special conation, general curiosity and general deference. Each one of these impulsive dispositions are evoked by the same activating event (A) and each one of them contributes to the guidance of the reactive event (R). The fact that in our diagram the three discs representing special conation, general curiosity, and general deference are of different size, one enclosing the other, since the mental continuum is not spatial, is of no significance at all.

In all practical purposive activity, then, obtains at least a triple motivation. Experiments on white rats have shown that a rat, who in order to get his food has learned to solve a problem during hunger, when satiated and brought into the problem situation, will manipulate the items of the latter as before. One possible interpretation of that behavior would be the original multiple motivation. Hunger removed, general curiosity and perhaps also general deference might remain and prompt the activity. No one of the conductors of these experiments have thus explained their observations.

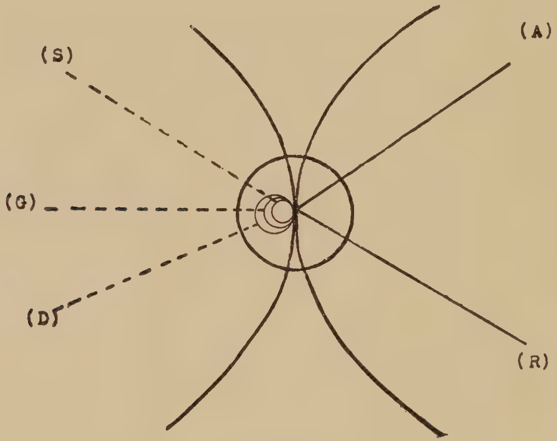

Fig. 26

If to believe in something is to assert its reality, as is implied in most current definitions of belief, it follows that the psychologically real object is identical with the object of belief. From this follows, in turn, that the conation conferring on an object the property of "object of belief" is the impulse of general deference. It should be noted that belief in an object does not prevent one from a certain measure of manipulation of — even destructive impact upon — it. Such reactions signify a compromise between defiant and deferent attitudes toward the object. Even to the object we destroy we defer as regards its property of being destructible; that is, we believe in the object as the seat of that attribute. Deference, indeed, enters into the very comprehension of nearly all cognitive psychological objects.

Whenever from the naive reality of the primitive mind such as that of a little child, certain psychological objects are sifted out as not real, this means that the deferent impulse is detached from these objects; and whenever in adulthood new beliefs are formed, this means that deferent impulse has become attached to certain states of affairs. Generally speaking the giving up of a belief constitutes a detachment from a psychological object of deferent urge, while the establishment of a belief means the attachment to a psychological object of deferent urge . I fail to explain this phenomenon; my view, however, has a close resemblance with Freud's notion of withdrawal of libido from objects and ideas, and investment of objects and ideas with libido; it has also a resemblance with very important aspects of McDougall's theory of the formation of sentiments, particularly with the substitution of primitive goals by higher ones. Neither of these two writers, as far as I can see, have advanced our understanding beyond pure description.

The theory of belief here propounded conceives each belief as an impulsive agent, as a directed force, which may enter as a component in any conative pattern, joining its energies with the energies of any other conative disposition at work, be the latter an instinct, a sentiment, or a complex of integrated sentiments. A simple figure will illustrate what I have here in mind.

Suppose, in this figure, the space between the two lines (A)—(A) and (B)—(B) represents a waterway. Suppose also that we consider the figure as a kind of a map with north, west, and east as indicated. Then, let us assume that point X represents the captain of a motor-driven craft. The point (X^1) is meant to indicate the position on the water-way which the craft and its captain at a certain time occupies. It is a foggy day and the captain cannot see very far ahead. Under his pilotage the vessel, propelled by the force of its machines, proceeds its course

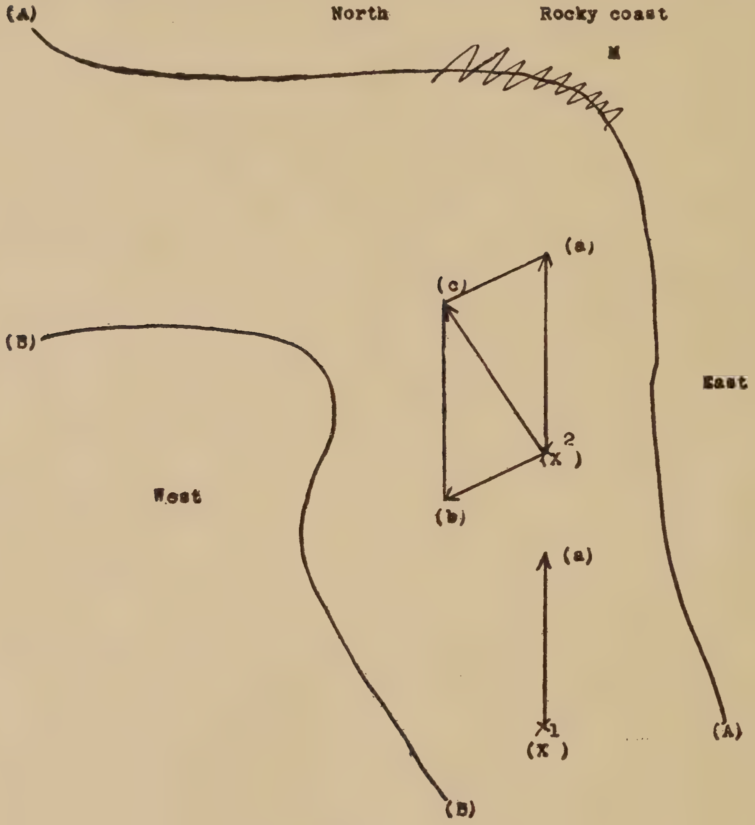

Fig. 27

in a direction straight north as indicated by the arrow (a). After a while, when it reaches a point (X^2), the captain suddenly discovers that right in front of him is a rocky shore — indicated in the figure by the portion (M) of the north-eastern coast-line (A)—(A). His perception combined with his belief in the danger of further approach immediately becomes a vector in the direction of arrow (b) causing him to change his course to the direction of arrow (c). His belief, thus, becomes the guide of his progress toward safety.

The example offered is a simple one in which the belief in a perceived object becomes a vector or force which controls conduct. What holds for perceiving as a guide of conduct holds also for all other cognitive acts. In so far as they render psychological objects of belief, they guide our adaptive endeavors. For instance, our memories, as yielded in the imaginative act of thinking the past, are apprehended as realities of the days of yore; the events in which we once participated are believed to have taken place. We apprehend cycles of past conation as objects to which we defer, this being the reason why memories become vectorial agents guiding our present conduct. Sometimes we may be in doubt as to the correctness of some details of our memory. In such instances we undertake what might be called the "compatibility test" of the memory item. That is to say, we investigate the measure in which the memory-detail harmonizes with other known events, past or present. Since the "compatibility test" constitutes the viewing of a memory-detail in its centrifugal relation to a broader state of affairs it must be considered a rational cognitive act prompted by general curiosity.

Our memories are apprehended as realities just as naively as the cognitive awareness symbols of present events in the world around us. In this respect, they are kins of the ego-object-relation-to-satisfy a special need, and of the object of that relation as archetypally apprehended in virtue of racial memory; they are also kins of the same object as perceived in the fusion of the archetypal intuition with exteroceptor sensory unlikes — tributes of general curiosity; and, finally, they are kins of the (EO)-relation as modified through the perception of its object.

In all these cases, as in the instance of memory, the belief in the reality of the respective psychological objects is a psychological ultimate that cannot be explained, merely acknowledged. Upon this matter writes James Ward: ". . . besides present 'matters of fact' and immediately intuited 'relations of ideas' there is still one important class of experiences wherein belief may amount to certainty, viz. the memories of what as 'matters of fact' are past . . . no confirmation is possible that does not assume the validity of memory, either directly — as in the demand for other testimony — or indirectly — as in the appeal to the constancy of nature . . . If this (the memory-continuum) is intact it constrains us, as much as perception constrains us, to recognize a present reality, the reality of the past. In spite of the notorious deceptiveness of memory in many cases and the impossibility of *proving* it true in any case, this constraint or conviction is, we find, as complete in those instances of distinct memory as it ever is in perception . . ."[5]

It is because our memories are objects of belief and thus endowed with deferent energy that they can guide our conduct. Whereas memories of past failure function like obstacles, that is to say, as objects of belief they are forces counteracting the tendency of our present special conation, memories of past success function as means; as objects of belief they support the tendency of the present special conational impulse. This consideration leads us directly to the examination of real obstacles and means.

From the plainly physical standpoint, any one obstacle (obstruction) is a material event which in a purely material fashion counter-acts the reactive event of special conation. As such, due to its activation of general curiosity it becomes perceived as an obstacle. Being perceived it is an object of belief and the direction of its deferent energy becomes a force counteracting the progress of special conation. From the physical standpoint the means is a material event which in a purely material sense furthers the progress of some special conation. As such, due to its activation of general curiosity it becomes known as a means. Being perceived as a means, it is an object of belief and the direction of its deferent energy becomes a force cooperating with the reactive event of the special conation. What is here said about obstacles and means is equally true of the final terms to which we arrive by simple inference or by complex reasoning. In so far as these terms are objects of belief — as psychologically they are — they are invested with a deferent force which might either cooperate with or counteract the endeavor of the special conation.

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[5] James Ward, *Psychological Principles,* pp. 351-352.

The hypothesis of general deference simplifies theory in one important respect. McDougall considered pleasure and pain psychological ultimates functioning much like mental "enzymes": pleasure enhancing effort and pain depressing effort. The role of these psychological ultimates was allegedly particularly important in those situations in which we anticipate whether success or failure in a goal-seeking task. Anticipation of success, according to McDougall, enhances effort, while anticipation of failure depresses effort. It might be an undue multiplication of theory to consider this role of pleasure and pain as a psychological ultimate. From my viewpoint, *satisfaction* is an awareness symbol, yielded by general curiosity whenever the reactive event of special conation has successfully led to adaptation, while *dissatisfaction* is the awareness symbol yielded by the same impulse whenever the reactive event prompted by special conation fails to effect proper adaptation. I have pointed out that in the affective experience of dissatisfaction there must enter a blend of the emotion of the persistently tormenting need with a quality (X) never experienced alone. These considerations lead us to the examination of what McDougall calls "blends of emotion and feeling." The role of pleasure and of pain as irreducible psychological "enzymes" can be reduced to the simpler terms of the vectorial effects of belief in success and of belief in failure respectively. Belief in success would be a force favoring the reactive event of any one special conation, whereas belief in failure would constitute a force definitely counteracting that event. From this viewpoint, McDougall's prospective affects of desire would gain a new setting. Though this might be a minor issue, as a matter of consistency and economy of theory it warrants treatment.

Cooperation and conflict between the central impulse of a special conation with deferent impulses of beliefs, activated in the course of goal-seeking, would generate its own peculiar affects. On all levels of life the (EO)-relation-to-satisfy a need comprises the anticipation of the outcome of effort, more especially of successful outcome. Such anticipation always coincides with a peculiar quality of awareness, *confidence,* which blends with the emotion of the central impulse. If, during goal-seeking activity, a belief of any kind is activated, the deferent impulse of which supports the special conation, then, the anticipation of success becomes accentuated and the experience of confidence is enhanced. If, on the other hand, a belief is activated, the deferent impulse of which conflicts very slightly with the central special conation, then, the anticipation of success becomes slightly reduced, and the affect of confidence changes into *hope.* In case the deference of belief conflicts more intensively with the prospect of the special impulse, the anticipation of success begin to alternate with the anticipation of failure, and hope turns into *anxiety.* If the counteraction of the central special impulse by the conflicting deference of belief is very powerful, then, anticipation of failure dominates our expectation, and the anxiety turns into *despondency.* Finally, if the deference of a belief is sufficiently strong to deadlock entirely the central special impulse, then, the anticipation of success vanishes completely, leaving room for the paralyzing conviction of failure; coincidently, despondency turns into *despair.* In all the instances to which reference has been made, no role has been given to pleasure and pain as conceived by McDougall. Instead, all facts have been interpreted in the terms of the simpler theory of the deferent conative property of belief. In order to summarize: cooperation of the deference of belief with special conation always intensifies the effort expanded into the reactive event of the latter, whereas conflict between the deference of belief and special conation always deducts from the effort put into adaptive endeavor. This, in a nut-shell, is the re-interpretation and reduction to simpler terms of McDougall's psychological "enzymes," pleasure and pain; it would seem to connote an economy of hypothesis which, in itself, would always be scientifically recommendable.

The relation between confidence, hope, anxiety, despondency, and despair, on the one hand, and the cooperation or conflict between special conation and the deferent forces of belief, on the other, is portrayed in the appended diagram (Fig. 28).

The arrow (A) represents the force of a special impulse. Encircled (a) stands for the same force as expressed in the terms of the deference invested in the (EO)-relation-to-satisfy a need as an anticipatory belief in success. Encircled (b) denotes the deferent force of a collateral belief; (b^1), the component parallel with (A), the amount of the force of encircled (b) that supports (A). The addition of (b^1) to (A) signifies a considerable intensification of the goal-seeking activity prompted by (A). Encircled (c), (d), and (e), respectively, represent the deferent forces of three other collateral beliefs, the deference of which conflicts with the central force (A) of the basic impulse; (c^1), (d^1), and (e^1), the components parallel with (A), represent respectively the amount of the deferent forces of encircled (c), (d), and (e) that conflict with the central conational force (A). Conflict whether of (c^1), (d^1), or (e^1) with (A) means a reduction of effort. Encircled (f), finally, represents the deferent force of a belief that completely paralyzes the purposive progress of the central special conation—neutralizing or entirely inhibiting force (A). At the arrow head of encircled (a) is indicated the primary confidence of the central impulse, that is to say, of the primordial belief that the

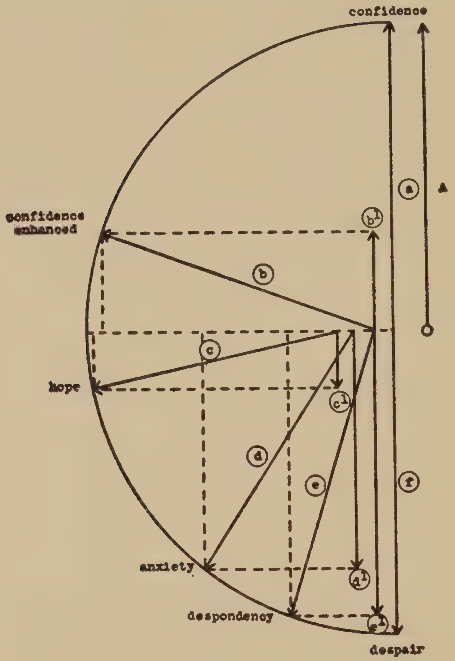
confidence
ⓐ
A
confidence enhanced
ⓑ¹
ⓑ
ⓒ
hope
ⓒ¹
ⓓ
ⓔ
ⓕ
anxiety
ⓓ¹
despondency
ⓔ¹
despair

Fig. 28

realization of the (EO)-relation will satisfy a need. At the arrow heads (b)-(f) are indicated the affective experiences that coincide with the cooperation and with the various degrees of conflict on the part of a special conation with the deference of different collateral beliefs activated in the course of the central endeavor, these affects being hope, anxiety, despondency, and despair.

Do we ever apprehend without believing? While the traditional formulation of this query would read: Do we ever apprehend without some judgment of affirmation or denial? the technical formulation of the latter from the viewpoint of belief laid down in the present work would be: Do we ever apprehend without deference?

It is evident that the question: Do we ever apprehend without believing? is closely allied with the more fundamental one: Is thinking or mere apprehension a psychological act different from the act of believing; and, if so, do the two acts occur in separation, that is to say, do they occur independently of one another? All writers and also common sense agree that there is no free-floating belief, that is to say, no believing is operative without the coinciding thinking of that which is believed. The very conception of free believing is an impossibility, and the supposition of its existence as an independent psychological act, without challenging argumentation, falls upon its intrinsic absurdity. But, is there thinking without believing? This is a reformulation of our original question; the replies to it vary. It is evident that those who answer the query in the affirmative are compelled to assume the two acts to be fundamentally different, whereas those who negate a complete disjunction between them might either regard the acts — though logically discriminable — as psychologically inseparable; or they might still consider them as basically different.

As representative of the opinion that the two acts are fundamentally different, and that thinking might take place without believing, stand: Reid, Brentano, and James; as expounders of the contrary view, namely, that there is no thinking without some measure of believing: Stout and, perhaps McDougall. I myself have joined opinion with the latter two. Stout's and McDougall's attitude to the question whether or not thinking and believing are basically different acts, is difficult to infer with certainty; I surmise, however, in the light of their respective treatments of the problem of belief at large, that they consider them different.

Thomas Reid, who is generally inclined to base doctrine upon common sense and upon the appearance of things to the plain man, writes: "Judgment is an act of the mind specifically different from simple apprehension, or the bare conception of a thing . . . Although there can be no judgment without a conception of the things about which we judge, yet conception may be without any judgment . . . It is self-evident that every judgment must be either true or false; but simple apprehension or conception can neither be true nor false . . ."[6] Brentano unequivocally expresses a similar opinion: "Every object comes into consciousness in a two-fold way, as simply thought of (vorgestellt) and as admitted (anerkennt) or denied. The relation is analogous to that which is assumed by most philosophers (by Kant no less than by Aristotle) to obtain between mere thought and desire. Nothing is ever desired without being thought of; but the desiring is nevertheless a second and a new peculiar form of relation to the object, a second quite new way of receiving it into consciousness. No more is anything judged (*i.e.,* believed or disbelieved) which is not thought of too. But we must insist that, so soon as the object of a thought becomes the object of an asserting or rejecting judgment, our consciousness steps into an entirely new relation to it. It is then twice present in consciousness, as thought of, and as held for real or denied; just as when desire awakens for it, it is both thought and simultaneously desired."[7]

I am not obliged to apologize for the terminology used by prominent psychologists of the past but I have to place on record that I consider the statement by Brentano to be systematically abominable.

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[6] *Thomas Reid Works,* ed. Sir William Hamilton, Edinburgh: Maclachlan, Stewart, 1872, I, p. 414.

[7] Franz Brentano: *Psychologie, II,* Leipzig, Meiner, 1925, Ch. VII. Translation quoted from James's *Principles of Psychology,* II, p. 286.

William James, influenced by Brentano writes about the relation of apprehension and belief as follows: ". . . the 'object' of thought may be comparatively simple, like 'Ha! what a pain', or 'It-thunders'; or it may be complex, like 'Columbus-discovered-America-in-1492', or 'There-exists-an-all-wise-Creator-of-the-world'. In either case, however, the mere thought of the object may exist as something quite distinct from the belief in its reality . . . The commonplace doctrine of 'judgment' is that it consists in the combination of 'ideas' by a 'copula' into a 'proposition', which may be of various sorts, as affirmative, negative, hypothetical, etc. But who does not see that in a disbelieved or doubted or interrogative or conditional proposition, the ideas are combined in the same identical way in which they are in a proposition that is solidly believed? *The way in which the ideas are combined is a part of the inner constitution of the thought's object or content.* That object is sometimes an articulated whole with relations between its parts, amongst which relations, that of predicate to subject may be one. But when we have got our object with its inner constitution thus defined in a proposition, then the question comes up regarding the object as a whole: 'Is it a real object? is this proposition a true proposition or not?' And in the answer *Yes* to *this* question lies that new psychic act which Brentano calls 'judgment', but which I prefer to call 'belief'. . . . In every proposition, then, so far as it is believed, questioned, or disbelieved, four elements are to be distinguished, the subject, the predicate, and their relation (of whatever sort it be) — these form the *object* of belief — and finally the psychic attitude in which our mind stands towards the proposition as a whole — and this is the belief itself . . . this attitude is a state of consciousness *sui generis,* about which nothing more can be said in the way of internal analysis . . ."[8]

G. F. Stout, as the representative of the view that there is no thinking without some measure of affirmation or denial, comments upon the matter as follows: "Nothing that has been urged in favor of the distinction between judgment and simple apprehension points to the existence of any moment in our conscious life in which the element of judgment is entirely absent . . . What has been maintained is that we can think about specific objects without correspondingly specific affirmations or denials concerning them. We must now point out that there is no thought without some kind and degree of judgment. . . . The existence of an object means for us that it has a place in the scheme of existence; that it forms a determination or qualification of reality in general. Unless the thought of this reality, however vague it may be, is at the same time an affirmation of it, no specific thought of a specific object is possible. Thus thinking is always inseparably connected with believing. The distinction between the attitude of belief and that of mere thought is relative . . . It is based on the fact that definiteness and distinctness in the apprehension of special objects need not be accompanied by affirmation or denial of these special objects as such. It is especially important to note not merely that this distinction is relative, but also that it seems only to emerge in a comparatively advanced stage of mental development. Primitive mental life, so far as it involves objective reference at all, seems to consist wholly in sense-perception. But sense-perception normally includes affirmation of the object perceived . . . If at this stage we are to maintain the distinction at all, we can only do so in the manner of Hamilton. We may say that apprehension and judgment 'are really one, as each involves the other, . . . and as together they constitute a single indivisible act of cognition; but they are *logically* double, inasmuch as, by mental abstraction, they may be viewed each for itself, and as a distinguishable element of thought'. But such a distinction can scarcely be said to have any psychological significance . . ."[9]

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[8] William James, *Principles of Psychology,* II, pp. 286-287.

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[9] G. F. Stout, *Analytic Psychology,* London: Allen, Unwin, 1902, I. pp. 111-113.

McDougall — a close ally of G. F. Stout — writes: "Primitively, implicit judgment and that lowly form of belief which is more properly called 'confidence' accompany all cognition . . . Affirmation or denial, acceptance or rejection, appetition or aversion, normally results from and accompanies cognition."[10] This statement is non-commital in regard to the question of the different nature of apprehension and belief, but it suggests an opinion similar to Stout's.

In chapter IX, page 236, I have submitted a diagram of the various cognitive acts as these have been denoted by psychologists and are recognized by the lay mind. Upon the diagram, I make the following comment (cf. pp. 239-40): "The acts of *affirming* and of *denying* the realness of a psychological object would seem itself, offhand, to be a cognitive act. Since, however, some form of affirmation seems to enter into any one of the cognitive acts of our diagram, it can be introduced only through a base line with pointers to the different separate acts. Normally, we affirm the reality of the objects we perceive. Our memories are affirmed as realities of the past, our anticipations as realities of the future. Insight unquestionably involves affirmation. In inference and reasoning, as a rule, we affirm the reality of the concluding term. There is only one exceptional cognitive act, in which reality-concern does not seem to enter in an appreciable measure: that is in the free artistic imagination and possibly also in the free forms of the highest mathematical reasoning."

The expression "absence of reality concern" refers to an attitude in which we neither affirm nor deny a proposition; neither do we doubt it. Consequently we do not defer to it and it does not guide directed adaptive conduct in the environment. Such a proposition devoid of reality concern is not embraced with any desire prompted by special conation. As the logical conclusion it must be prompted by general curiosity. The novelty in my conception of belief has been the supposition that "a belief" is not merely a cognitive but also a conative disposition and that the common conation that gives to all objects the property of being real is general deference which in all practical endeavor cooperates with special conation on the one hand and with general curiosity on the other.

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[10] William McDougall, *Outline of Psychology,* pp. 375-376.

How do we come to acquire and to entertain enduring beliefs? That development is essentially the one of the growth of our *intellect.*

CHAPTER XIII

THE GROWTH OF THE PSYCHOLOGICAL SELF: (III) INTELLECT

OUR *intellect* might be properly defined as *the integrated system of our beliefs.* That is the way McDougall defined it in his work of 1923, *Outline of Psychology.*[1] He had at that time no explicit recognition of the vectorial properties of belief as asserted in my hypothesis of general deference. Beliefs were considered instrumental to conation but the dynamics of their instrumentality was not accounted for. In his later volume of 1933, *The Energies of Men,* McDougall unfortunately changed his conception of intellect. It is here defined as the sum total of our cognitive abilities.[2] In view of his confusion of these with the simple receptive abilities which to me are matters entirely of the body-tool I have to reject his revision of the concept of intellect. The cognitive abilities again are described as instrumental but not as independent sources of energy. My own theory of belief makes the beliefs sources of energy and so vectorial agents in a complex parallelogram of forces. From my viewpoint the sharp distinction disappears between character and intellect; both are energetic units which cooperate with one another in complex adaptive endeavours — the energy of intellect being deferent energy.

There can be little doubt that there is an inborn basis of intellect. The objects we perceive through the instrumentality of our exteroceptor receptors are naively apprehended as realities, as things independently existing out there in space, in other words, they are objects of belief to which, in our practical activities, we defer. A large number of psychologists and philosophers, each in the terms of his own scientific or philosophical system, have endorsed, as a psychological ultimate too fundamental to be derived from anything else, that lay or common sense supposition. Thus, William James asserts that everything which excites sensation is comprehended as real; and as the excitation of emotion to him is merely a special case of sensory excitation, the reality of the events stirring emotional reaction and interest is also sensationally explained by his general principle.[3]

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[1] Cf. Chapter XV.
[2] Cf. Chapter XXIV.

In his own manner, James Ward writes to the same effect: ". . . if dazzled by the sun I say 'It is light', the psychological necessity accompanying this assertion, though it is confined to a single instance, is more absolute and immediate than that which is present when I say 'Unsupported bodies fall', a proposition which I and my ancestors before me have verified innumerable times and never found to fail . . . The certainty of sense is fundamental, whilst the certainty of thought, as concerned with objects of a higher order presupposes sensory *fundamenta* . . . Here with the subject confronted and determined by the immediately given or presented objective — here at the very outset of experience, before association begins — we have that complete state of mind in which all the *factors* of belief are found in Descartes' *Cogito* filled out: I am and It is. Here then, where as yet reflection and doubt are alike impossible, we have the *fons et origo* of certainty . . . 'Seeing is believing' holds for objects of a higher order as well as for sensory objects which they relate. Seeing is believing, and all talk of a further criterion of 'subjective certainty' seems as meaningless as to ask for a criterion of hunger or any other immediate experience."[4]

A pregnant passage in the same vein by G. F. Stout: "Primitive mental life, so far as it involves objective reference at all, seems to consist wholly in sense-perception. But sense-perception normally includes affirmation of the object perceived. It is, in the language of Reid, 'the conception and belief which nature produces by means of the senses'."[5]

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[3] William James, *Principles of Psychology,* II, 299-311.

[4] James Ward, *Psychological Principles,* pp. 349-351.

William Stern states his proposal to the same effect, quite bluntly: "It is in the nature of every perception to bring with it a suggestion of its own truth, a prompting to believe in it."[6]

It would seem difficult, then, to deny that naively we believe what we perceive. It is futile indeed to claim that the reality adhering to the object naively perceived is due to individually and ontogenetically acquired knowledge; for, if we do that, we are called upon to give a rational account of the way by which the latter knowledge is gained, and this is an impossible task. I suggest, instead, that we be satisfied to own that, in virtue of innate organization, certain events in the physical continuum provoke simultaneously (1) some special conation prompting the (EO)-relation-to-satisfy a need, (2) general curiosity through which the object of that relation becomes perceived, and (3) general deference through which that perceived object becomes apprehended as a real thing.

It is also, as James has pointed out, inconceivable how doubt, on the part of the naive mind, of the reality of the object perceived could have any meaning whatsoever: "Suppose a new-born mind, entirely blank and waiting for experience to begin. Suppose that it begins in the form of a visual impression . . . of a lighted candle against a dark background, and nothing else, so that whilst this image lasts it constitutes the entire universe known to the mind in question . . . What possible sense (for that mind) would a suspicion have that the candle was not real? What would doubt or disbelief of it imply?"[7]

All evidence, then, urges us to accept the supposal that, naively, we believe what we perceive by virtue of racially evolved purposive organization of our mind, and, although we cannot prove this view, we can support it by biological and philosophical considerations.

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[5] G. F. Stout, *Analytic Psychology,* I p. 112.

[6] William Stern, *Psychology of Early Childhood,* New York: Holt, 1924, p. 273.

[7] William James, *Principles of Psychology,* II, p. 287.

Assume with the biologist that there is an external world, part of which is regulated by physical law, continually manifesting itself in physical events. Assume also, like the biologist, that the living beings, in order to survive individually and racially, have to adapt themselves to these physical events which, otherwise, would irresistably occasion their destruction. Then, an important feature of adaptive evolution would seem to be the acquisition of those organismic tools which are auxiliary in the efficient knowledge of the physical world, and its events. As a consequence, our apparatus of perceiving the external world, or our exteroceptor sensorium, evolves and becomes increasingly refined. If the capacity of perceiving evolves as a means of adaptation, and if it actually aids the survival of the individual and the species, as can hardly be questioned, then, it would seem absurd to doubt that the perceptual symbols — at any rate sufficiently for the practical purposes of adjustment — approximate the nature of the physical things and events for which they stand. Even more absurd would it be to doubt that, naively, the living being — enjoying the property of being able to perceive — would apprehend as realities the things with which this property acquaints him, things which seem of such an eminent significance in all his endeavors.

If, by biological necessity, the object perceived is an object of belief, the same would no less be the case with the object desired. Biological and philosophical arguments could as well be brought into the support of the latter proposal as of the former. But, the theorem that the object desired is naively apprehended as an object of belief obtains a more immediate support by the fact that the psychological object perceived is always naively an important constituent in the psychological goal of a simple freely working impulse; it is, indeed, nothing but the object of the (EO)-relation-to-satisfy a need, spatially projected through the act of perception. This, in other words, signifies that the two propositions, (1) the object perceived is naively apprehended as a reality and (2) the object desired is naively apprehended as a reality, are actually only two sides of one and the same more fundamental psychological truism, namely: the goal striven for, that is to say, the (EO)-relation-to-satisfy a need, whether its apprehension comprises perceptual or merely imaginary constituents or both, is always naively apprehended as a reality.

The recognition that the two proposals are basically only one, has been delayed because of the intellectualistic lag which lingers in the thinking of even the most honest conational psychologists — their pitfall remaining a confusion of the causal relations between cognition and conation. McDougall, for instance, though strongly emphasizing that the meaning of any one object of thought is definitely determined by striving, at the same time insists that some simple mode of perception must antecede and call into play conation. I have attempted to solve the contradiction of the dilemma by designing a novel theory of perception (laid down in chapter IX of the present volume). This theory, I believe, is the only one from which it becomes fully clear that, naively, the object perceived is an important constituent in the goal-object of some special impulse, notably, in the (EO)-relation-to-satisfy its need.

In summary, that theory holds that the act of perception is essentially one of the fusion of two constituents. One of these is the immediately apprehended meaning of the (EO)-relation-to-satisfy a need, yielded by some mode of special conation, the other is a configuration of unlikes coincidently elicited by general curiosity. The belief in the beneficial power of the (EO)-relation compassed would depend on the third of the cooperating impulses, notably, upon the general deference excited by the same physical event which provoked into activity the other two. In so far as the (EO)-relation — initiated primarily as an imagined cognitive content — becomes qualified by the perception of its object, it remains an object of belief, now localized in space.

Out of the phylogenetically founded confidence in the reality of the (EO)-relation, develops one of the principles by which, in the ontogenesis of the individual, his beliefs are engendered, notably, *the emotional principle.* Throughout the life of most of us, that principle subsists and conflicts more or less severely with the second principle of belief-engenderment, *the rational principle.* The emotional principle of belief-engenderment is to the effect that *we tend to believe what we desire to be true.* That principle can hardly be questioned. There are uncountable literary citations to bear it out; it elicits also an affirmative resonance in the lay mind. It is a primitive principle; it determines the beliefs of the savage as well as of the infant, I choose to illustrate it from the realm of child life.

A child about the age of four is apt to believe in fairies if stories of fairies are related by mother or nurse. He will be likely to accept as true all propositions made by the story-teller about the nature and the doings of fairies. He will also believe in the reality of giants and monsters who kidnap and devour little children who disobediently run away from home. How, psychologically are these beliefs of childhood formed? Are they the expressions merely of the docility on the part of the child toward the adult story-teller? I believe not.

It is evident that children are much inclined to let their imagination play around the themes of fairy land, oftentimes even to the extent of elaborating these themes in what may be called a creative manner. That inclination purports that the story has become the center of, or the central object of an impulse, other than infantile docility or submission, an impulse which subsists and outlasts the moment when the story was actually told by the elder. Submission requires the psychological presence of the authority, and, certainly, when the little child indulges in fairy-fantasies, there is little place in his mind for the authoritative narrator.

The impulses generating the fairy-fantasies might be of one or the other of two general kinds: impulses of attraction or impulses of aversion, or, in other words, impulses which make respective contents either desirable or repulsive (even fearful). Primarily, these impulses are probably provoked by primitive passive sympathy, the facial expression, the affective gesture, and the affective voice-intonation on the part of the story-teller being the stirring agency; once brought into activity, they become important determinants of the meaning of the story. It should be clearly kept in mind that the evocation of conative attitudes towards object or themes by the appeal to passive sympathy is, by no means, a mastery of the child through authority or domination: appeal to submission.

Turning to particulars, the impulses evoked in the child might be many: a desire springing from the gregarious instinct to associate and to play with the pretty fairies and the jolly gnomes, or a desire to be kind to the poor little gnomes who are so tiny and frail, an impulse derived from the great protective instinct, or a desire to share with the little fairies their subtle beauty and grace (an "ugly-duckling" longing), or to possess merely their rich and lovely garments and gems, impulses arising conjointly from the assertive and the acquisitive instincts. On the other hand, the impulses evoked by the giants and monsters belong to another kind: aversion, fear, disgust, or some blend of the latter.

It should be noted that in all these instances of infant belief in fairy tales, the child views the object very much like simple objects of (EO)-relations-to-satisfy a need. The objects are regarded nearly entirely in a centripetal relation to the self —

that relation which is characteristic of what earlier we have called "apprehension mode (A)" (Cf. Chapter IX).

I suggest that the operation around the fairy-themes of spontaneous childish impulses engenders and enforces the belief in the reality of these themes; I argue my supposition simply as follows: it is a basic psychological axiom that a goal desired, at the time of desire, is apprehended as the most real of things known, as things to which we unconditionally defer. Thus, if continually and urgently, that is to say, desiringly a little child is preoccupied with certain ideal themes and topics, these will gradually grow into firm and enduring objects or belief. This principle of belief-engenderment is essentially the one underlying *primitive credulity* thought by McDougall to apply even to the animal level. "The animal accepts as real whatever object evokes any instinctive impulse. Primitive man does likewise. This is primitive credulity . . . We tend to believe in the reality of whatever evokes an instinctive impulse. A sound in the night evokes fear and is interpreted as the movement of a beast of prey; the beast is imagined and accepted as real, in virtue of the strong impulse evoked."[8]

I have depicted the little child's belief in fairy-land, not as essentially engendered by submission to the authoritative narrator, but rather by a variety of impulses set up originally by passive sympathy and, once set up, continually provoking elaboration of the fairy-theme and enforcing belief in the latter. Its reality might reach such a measure that some children even hallucinate the actors of fairy-land. The phenomenon of "imaginary companions" instances a complete confusion of that which is imagined with that which is perceived. Jersild quotes an interesting case of imaginary companionship which well illustrates the vividness of the phenomenon and the depth of confusion involved. "A girl of four screamed a warning to her father as he was in act of sitting down on the sofa; when questioned, she reported that her imaginary playmate (a monkey) was having a sick spell and had just soiled the cushion on which her father was about to sit."[9]

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[8] William McDougall, *Outline of Psychology,* p. 373.

In the same manner as — independently of suggestion by elders — there is an ascent of the belief in fairy-land, there is also, at a later stage in infancy, a correction and a clash of that belief which, for all appearance, is spontaneous rather than induced. This development coincides with the strengthening of the impulse of general curiosity — a development that depends partly on maturation and partly on learning. It breaks up the egocentric attitude of the little child prompting him, instead, to vision things in a centrifugal relation to one another.

"Alice in Wonderland" has about reached the age when the consideration of the relation of things to things has begun to compete with the appreciation of things merely in their relation to the desiring self. Recall, for instance, the following episode from the outset of her adventures:

> . . . a White Rabbit with pink eyes ran close by her.
>
> There was nothing so *very* remarkable in that; nor did Alice think it so *very* much out of the way to hear the Rabbit say to itself "Oh dear! Oh dear! I shall be too late!" (when she thought it over afterwards it occurred to her that she ought to have wondered at this, but at the time it all seemed quite natural); but, when the Rabbit actually *took a watch out of its waistcoat-pocket,* and looked at it, and then hurried on, Alice started to her feet, for it flashed across her mind that she had never before seen a rabbit with either a waistcoat-pocket, or a watch to take out of it. . . .[10]

In the episode quoted, it is apparent that the unreality of the event which starts Alice upon her whole adventure, is the result of her viewing the former not with mere ego-concern, but also centrifugally in the light of other experiences. That is how the rabbit's action comes to appear to her queer, and to instigate the pursuit with the many sequellae. Alice has evidently passed the stage when, as Stern describes it, "the child . . . is a creature of the moment," and as the result of its "concentration on the present . . . is free from . . . the desire to bring its perceptions in connection with the past and the future, and thus to test their reality."[11]

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[9] A. T. Jersild, *Child Psychology,* New York: Prentice Hall, 1933, p. 271.

[10] Lewis Carrol, *Alice's Adventures in Wonderland,* Washington: Jacket Library, 1932, p. 10.

When, on a later occasion, Alice has eaten a piece of a magic cake and, as a consequence, finds herself elongated to the height of nine feet, it is the consideration of that strange mishap in its universal rather than in its ego-relation that urges the following reflection:

> . . . "Dear, dear! How queer everything is today! And yesterday things went on just as usual. I wonder if I've changed in the night? Let me think: *was* I the same when I got up this morning? I almost think I can remember feeling a little different. But if I'm not the same, the next question is 'Who in the world am I?' Ah, *that's* the great puzzle!" And she began thinking over all the children she knew that were of the same age as herself, to see if she could have been changed for any of them."[12]

What experiences promote the development of the impulse of general curiosity which so evidently expresses itself in Alice's consideration of object-object, rather than of object-subject-relations? There can be but one answer: the experience of obstacles.

It will be remembered that the simplest instance of relating objects to one another, on the one hand, and to the self, on the other, concurs with the primitive apprehension of the reciprocal obstacle-means-end dependence. According to my hypothesis of the obstacles and the means, the former is the awareness symbol of events in the environment which, in a purely physical sense, counteract the reactive sub-act of some special conation, whereas, the latter is the symbol of environmental events that, in a purely physical sense, further the reactive event of some special conation. The two, alike, are tributes of general curiosity stirred by the respective events. Since some species of animals without learning or drill show spontaneous insight into simple obstacle-means-end relations, we have to assume that in these species there is some kind of phylogenetic foundation of that simple insight. Nevertheless, we must acknowledge that most insight into more complex obstacle-means-end relations is acquired in the individual life-course of the living being — that fact becoming most conspicuous in the case of man. Obstacles are encountered on numerous occasions in life. The obstacle obstructs the locomotive sub-act of conation; in civilized man, particularly, the total energies of the unit at work are, then, thrown into the cognitive act of search for means to overcome the obstacle. Theoretically, this signifies that most of the energies are drained into the channels of general curiosity relating, until the means is found, past with present, present with present, and present and past with future. Through the repetition of such experiences, by the law of exercise, general curiosity becomes strengthened.

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[11] William Stern, *Psychology of Early Childhood,* p. 273.

[12] Lewis Carrol, *Alice's Adventures in Wonderland,* pp. 23-24.

The insight into obstacle-means-end relations can be looked upon from another angle. In so far as it guides conduct, insight incorporates belief in or deference to its objects and to their reciprocal inter-dependence. In that respect, insight may be said to constitute a *system* of beliefs, simple or complex. In spontaneous simple insight, the deference has a phylogenetic foundation, in all instances of acquired insight, the deference involved becomes a matter of ontogenetic belief engenderment. In further examination of the belief-engenderment manifested in insight, it would seem reasonable to contrast it with the confidence in the (EO)-relation-to-satisfy a need; the latter can properly be considered engendered by the emotional principle, that is to say, by the principle that we tend to believe what we wish to be true. In case there is any meaning whatsoever to instinct theory, it can also be considered the result of a phylogenetic development. The belief in the means to an end would reasonably seem to be also engendered by the emotional principle. The close kinship between the belief in the means to a desired end and in the belief in the (EO)-relation itself becomes evident if we choose to regard the realization of the (EO)-relation the means to the satisfaction of a need; from that viewpoint, the satisfaction of needs would become the ultimate goals of all special impulses. There is much to be said in favour of such an interpretation. G. F. Stout has written a few wise words in support of the proposal that the belief in the means are instances of emotional belief-engenderment: ". . . To strive after an end is to strive after the means necessary for its attainment. Hence in striving after an end, we strive after the belief which alone makes action with a view to that end a psychological possibility . . . the mind presses forward towards its mark as best it may, shaping those beliefs, and clinging to those beliefs, which are most helpful to it, and passing by those alternatives which would hamper and paralyze its activity . . .

". . . Ends can only be realized by the use of means; but in order to use means we must have some belief in their efficacy; hence the impulse to pursue an end is also an impulse to form beliefs which will make action for the attainment of the end possible . . ."[13]

There can be little doubt that the citation submitted is in harmony with the proposal that the belief in means is engendered by the emotional principle. Nevertheless, though there is much to be said in its favor, that proposal does not unequivocally hold water; our reserve, however, can be appraised only after a consideration of the obstacle and, particularly, of the relation of the means to the latter. What about the obstacle? By what principle is our belief in the reality of the obstacle engendered?

The obstacle, to be sure, resists our wish to attain the realization of the (EO)-relation-to-satisfy a need. Notwithstanding, it becomes invested with deferent energy, that is to say, it becomes an object of belief in no less a measure than the means-object. Before attempting to examine the mechanism underlying the endowment of the obstacle with deferent energy, let us first agree that all psychological objects or events which are related to a practical goal-seeking endeavor are of *reality concern.* As such, they are either affirmed or denied; or they may be doubted. Any one of these our attitudes is one of reality concern. In cases of highly artificial cognition — such as aesthetic and mathematical cognition — the act and its terms lack reality-concern; we do not affirm or deny or doubt their reality.

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[13] G. F. Stout, *A Manual of Psychology,* London: Univ. Tutorial Press, 1915, pp. 674 ff.

In practical adaptive endeavor, then, the obstacle is of reality concern; what does that mean? It means that the awareness symbol which stands for a physical event counteracting the reactive event of special conation is invested with deferent energy (that awareness symbol as we remember is yielded by general curiosity evoked by the obstructive event). Either one of three psychological attitudes toward the obstacle might emerge: (1) the obstacle as such is entirely denied; this would mean that the wish for the realization of the (EO)-relation is so strong that it entirely obliterates any affirmation of any circumstance adverse to that realization. This would be exemplified by the little child who has been locked into a room and who in the desire to escape blindly bangs with his fists on the door; (2) the obstacle is so strongly invested with deference that the ensuing belief completely paralyzes the effort to reach a goal. This would be exemplified by a child who, knowing that the door of the room in which he is confined cannot be broken down, sits down and cries in abandonment and despair; (3) the obstacle is believed a hindrance which might or might not be broken down. That attitude constitutes the *fonce and origo* of all search for means or for what the Germans call the *Umweg,* and so of all rational problem solving; it is the ground of all consideration of objects in centrifugal relation to one another as well as in centripetal relation to the self. This attitude would be illustrated by the child who, believing the door impenetrable, proceeds to break a window and thus escapes.

Let us here continue the quotation from G. F. Stout on belief engenderment: ". . . practical and theoretical needs [in our terminology that expression means coercions springing respectively from special conation and from general curiosity] play an essential part in determining what we shall and shall not believe . . .

". . . Belief is not only conditioned by mental activity, but also involves restriction of mental activity. Objective coercion is of the very essence of belief. [The child who, believing the door an insurmountable hindrance, sits down and cries, is completely overcome by the objective coercion of things.] Whatever influence subjective needs may have in determining belief, they can never be the sole factor. In framing a belief, we endeavor to represent real existence as it is in its own nature, independently of our individual consciousness . . . [That wisdom has not as yet dawned upon the child who, prompted by a subjective need or wish, blindly beats at the door evidently refusing to regard it an obstacle or, at least, an obstacle possessing the property of impenetrability to his primitive attack.]

"Beliefs depend on subjective tendencies, just because these tendencies cannot work themselves out without it . . . But it is not within the range of our arbitrary selection to determine *what* means will lead up to a given end, and what will not. This depends upon the nature of the real world in which we live. There must therefore in the framing of a belief be always some endeavor to conform to conditions other than and independent of our own tendencies." [14]

In our terminology, the endeavor to which Stout refers, is at the basis of all experimental conduct, of all exploration of obstacle-means-end dependencies by the rational act of relating objects to one another and to the universe at large instead of exclusively to the self and to the need of the self. Such exploratory conduct, according to our theory, is urged by general curiosity in cooperation with special conation. In the unfoldment of that conduct, means are found to overcome obstacles, the enduring belief in these means being necessarily contingent upon their discovery by the rational act of exploring object-object relations. Since in the very recognition of the means is implicit the affirmation of and the deference to it as the seat of certain definite properties, we would have to contend that, in one of its aspects, the engenderment of belief in the means is a rational belief-engenderment. The belief in the means, however, is undoubtedly strengthened by the fact that it turns out to satisfy an emotional need. In the latter concern, then, the engenderment of belief in the means proceeds in accord with the emotional principle. Sometime, we jump with confidence to faulty conclusions regarding means. Evidently, our error is here the result of undue emphasis on the emotional factor in belief engenderment and to the insufficient balancing of it by the rational consideration of all the pertinent circumstances. The child who broke the window and thus found the Umweg for escaping, apparently applied to his problem solving emotionally as well as rationally engendered beliefs, whereas, the child who despondently beat the door did not.

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[14] G. F. Stout, *A Manual of Psychology,* London: Univ. Tutorial Press, 1915, pp. 674 ff.

I have quoted an assertion by G. F. Stout: "objective coercion is of the very essence of belief." What is it that effects such an "objective coercion"? That question can be answered in two related predications: (1) on the primitive level of the savage and the child it is the resistance of any one environmental object or event to our strivings; (2) on the level of the civilized human adult is the compatibility and incompatibility of propositions with one another. For the further elucidation of these two predications, I shall let McDougall speak.

". . . what we really mean, when we assert the reality of a thing, is that the thing has a nature of its own which reveals itself in the resistance it offers when we strive to change it . . .

". . . the most complete proof of the reality of any object is the resistance offered by it to our bodily effort to move or change it. Solidity is overwhelming evidence of reality . . .

"Belief in reality of other things is determined by a projection of one's own reality; and that reality is at bottom one's power of striving, of exerting effort, of persisting toward a goal . . .

"One's own self is believed in as real, because we desire and strive and achieve, or fail: any other thing is believed to be real in so far as it seems to us to be like ourselves, that is to say, in so far as it seems to have a determinate nature of its own which resists us; and all our beliefs are dependent upon such beliefs in realities . . ." [15]

If we consider in conjunction, on the one hand, Stout's proposal of the objective coercion in belief-engenderment and, on the other hand, McDougall's notion of resistance to our effort as a criterion of belief, then, the reality of the obstacle becomes easily comprehensible. The obstacle is the awareness symbol of an event that, contrary to our desire, resists our effort to expand energy into reactive locomotive activity; it exerts upon us its own objective coercion. The belief in the obstacle must be considered as primitive and archetypal as the belief in the means, especially, the belief in the realization of the (EO)-relation as a means of satisfying a need. But, while the latter belief is essentially engendered by the emotional principle, the former is not. It arises, rather, from the recognition of the incompatibility of two events, the event that is the physical basis of the obstacle, on the one hand, and the reactive event of desire, on the other. That recognition crystallizes into a conflict between beliefs. In case that conflict resolves itself into a paramount conviction that the obstacle is an insurmountable hindrance, complete obliteration of the reactive event ensues; if, on the other hand, it resolves itself into a weighing conviction that the obstacle is only a negligible hindrance, that leads to blind and ineffective impacts upon the obstacle; thirdly, if the conflict continues leaving a doubt as to the obstructive efficacy of the obstacle, only then ensues truly rational activity in search of the Umweg. In the last case, the obstacle, in a strange manner, is apprehended at a time a hindrance and a means. It is that attitude exclusively which, by switching into intensive activity general curiosity, generates rational problem solving. In the search for the Umweg all these beliefs are engendered which owe their genesis to the rational consideration of object-object relations prompted by general curiosity. It is, then, that the objective coercion of things around us together with our desires for a goal gives rise to the centrifugal centripetal mode of regarding things in their relation to one another as well as to the self.

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[15] William McDougall, *Outline of Psychology,* pp. 372-375.

McDougall has urged that the resistance test of reality applies not merely to perceived resistance to our muscular effort but, also, to such high levels of cognition as remembering and reasoning; here, it becomes a test of compatibility versus incompatibility of propositions.

". . . In reproductive imagination, or remembering . . . the truth of our recollection, . . . [is believed] in so far as our imagination of the past is stable and offers resistance to our effort to change it. Consider how your belief in the reality of some past action of yours is founded, if, say in a court of law, your testimony to it is required and challenged. The question is raised — Did you, or did you not, lock the door on leaving your apartment? The ground of your belief in the reality of your locking the door is not the vividness with which you can picture yourself doing it; it is rather the fact that, as you depict your exit on that occasion, the imagination of the act hangs obstinately together with the rest of the sequence of behavior which you depict. If you attempt to excise it from the sequence, you remain aware of the gap which you have made . . ."[16]

"On the highest plane of mental life, that of reasoning, the same law of belief holds good. When we reason from believed premises to a conclusion, our belief in the conclusion derives from our belief in the premises; the former belief . . . resists in some degree our efforts to avoid the conclusion."[17]

Applying now the general suppositions of Stout and McDougall to the specific case of the child who, having been convinced in the reality of fairy-land gradually drops that infantile belief, it might be reasonably assumed that the very first sifting out from the world of wish-determined fantasy of those realities which endure in later life results from the recognition of their resistance to efforts of changing them. The fantasy is entirely moulded by the child in accord with his desire; other objects resist such a moulding — to begin with the latter is the case with the objectively real people. The discrimination between fantasy and objective reality might become furthered by the discovery that, as means to desired ends, some agencies are better fitted than others. For instance, the child might discover that a lollypop offered by the real mother is more satisfying than the one offered by the imagined fairy queen. Such experiences would prognosticate the very first phases in the decline of fairy land. Whatever tarries between this phase of primitive scepticism and the developmental stage illustrated by "Alice of the Wonderland" is impossible of detailed enunciation; this much, however, might be conceded that in her case the questioning of the reality of the fairy dream rested upon memories brought to bear upon the dream-event, memories which had attained a sufficient degree of stability as realities to resist change or modification.

All higher cognitive acts are instrumental in so far as, whenever desire is obstructed, they aid the finding of the Umweg. In the act of reasoning the finding of the Umweg depends upon the already established system of beliefs, the premises. Whenever a system of beliefs has grown to a certain size and to a certain measure of integration, new propositions will be accepted insofar as they are compatible with the already achieved system, or at least insofar as they are not incompatible with the latter. In each instance the acceptance or rejection of the new proposition is a matter of applying to it, on a high level of cognition, the resistance test. If the acceptance of a new proposition would compel the change of already strongly established beliefs, in view of the power and seniority of the latter, the novel proposition is likely rather to be rejected. This is an expression of the conservative nature of the human mind. Any resistance test carried out on the high plane of reasoning, of course, involves the viewing of things in relation to one another. But, even in these higher forms of reasoning, general curiosity functions in cooperation with some special conation which actually sets the problem to be solved. Less that special conation prompting some practical endeavor, no objects cognized will attain reality-concern. In aesthetic contemplation urged, in relative independence of special adaptive impulses, by general curiosity, propositions lack reality-concern; no belief in them is engendered (Cf. Chapter XIV).

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[16] William McDougall, *Outline of Psychology,* p. 374.

[17] *Ibid.,* p. 374.

Though simple systems of belief might be acquired in the direct encounters with experience by the primitive man as well as by the child, the complex systems of beliefs of the civilized human adult are largely a matter of education and schooling during youth. I have commented on this topic on an earlier page lime-lighting, especially, the question whether or not our cognition, at the time when we acquire the bulk of our intellect, is artificial rather than practical. If the former were the case, we would be facing a paradox: cognition without reality-concern would engender belief. In the acquisition of intellect, which is the achievement largely of education in youth, is embodied highly complicated acts of relating psychological contents of a simple or of a complex type to one another and to knowledge at large. In many instances, it might seem difficult to establish the end or goal served by this prolonged and intricate assimilation of the knowledge accumulated by uncountable generations of past searchers for the elixir of wisdom. This, I suggested, was because the goal is remote and not explicitly specified or defined. However, in acquiring knowledge through schooling we store potential means of achieving future important adaptive ends — a circumstance which gives to the cognized relations reality-concern and makes them differ from the ones of purely aesthetic-logical contemplation. The cognitive acts pregnant in the acquisition of intellect through education, thus, emerges as a mode of practical cognition.

Many psychologists have thought that there is a third principle of belief-engenderment in addition to the emotional and the rational principles. That third principle would be the one of belief-engenderment through sheer authoritative suggestion; it has been considered of particularly vital importance during our youth, that very time when we enjoy the benefit of schooling. The idea is that the teacher expresses a proposition such as for instance "space is curved" and by sheer submission to the authority of the teacher, the pupil accepts this proposition — the latter from then on becoming an enduring belief and a part of his integrated intellect. I strongly doubt, that suggestion in this sense plays the important role in belief-engenderment that has been alleged to it. First of all even an authoritative teacher in order to convince a student has to present rational evidence in support of his proposal. In itself, that necessity implies that bare submission is insufficient to induce belief. In a more positive sense, it implies that appeal has to be made to those rational cognitive activities which are rendered by general curiosity; in so far as that is the case, the ensuing beliefs become instances essentially of rational belief-engenderment. Many times, the teacher, in order to induce belief, has to appeal also to special impulses of the pupil. Such an appeal might be to the better or to the worse. The education of the Nazi youth proceeded largely in the latter manner. Beliefs were engendered not so much by a rational appeal as by the touching off of great emotions. The outstanding sentiment appealed to was the one of racial pride; another was hatred of the Hebrew; a third was the fear of severe punishment even annihilation of anyone who diverged in his thought from the philosophy of the party. The convictions engendered in the Nazi youth are, thus, typically of the kind of emotional engenderment. In the endeavor on the part of the "leader" to sway the opinion of men, there is a conspicuous lack of genuinely rational appeal.

The most successful propaganda or persuasion is probably effected not by appeal to submission, not by merely rational or by merely emotional appeal, but, by a rich appeal to reason as well as to sentiment. Shakespeare knew much about the basic principles of the psychology of belief-engenderment when he compounded the two propaganda speeches by Brutus and by Mark Antony in his psychologically extremely interesting play *Julius Caesar.* As perfect illustrations of the two major principles of belief engenderment, I have undertaken, in a special article of 1938, an exhaustive analysis of the two speeches.[18] Only a summary of my conclusions can be here quoted.

Brutus's speech distinctly and strongly appeals to the submission of his audience, while in Antony's speech such an appeal is conspicuously absent. Both speeches appeal to rational consideration—Antony's, however, in a higher measure than Brutus's. Antony rarely states a rational conclusion in a positive assertion but, rather, in a question which he guides his listeners themselves to answer. Such a procedure embodies an appeal to the assertion of his audience; the same is true of his frequent use of irony. Brutus, on the other hand, states rational conclusions in positive proposals; as regards affective appeal, his speech merely touches off one or two highly abstract sentiments directed upon the collective ideal of the state as an institution. In contrast, Antony's speech appeals to a large variety of concrete impulses of intimate personal significance.

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[18] Helge Lundholm, "Mark Antony's Speech and the Psychology of Persuasion," *Char. and Pers.* Vol. VI, No. 4, 1938.

In view of the failure and success respectively of the two speeches, one might be justified in referring the abortive character of Brutus's and the successful character of Antony's attempt to the differences of propaganda method applied by the two orators. Accordingly, one would conclude that Antony's success probably was at least partly due to his careful avoidance of appeal to submission, whereas Brutus's failure would be partly due to his strong emphasis of such an appeal. Submission to a fellow-man is injurious to the pride of many people while assertion is not. That would be why even a deceptive appeal to assertion—such as Antony's speech continually discloses—might become a more effective agent in the induction of belief than appeal to submission.

Antony's success is probably also partly due to the richness, concreteness and personal significance of his appeal. He speaks of Caesar filling the common treasury with gold; of Caesar weeping when the poor have cried, etc. Brutus, on the other hand, relates Caesar's person chiefly with the welfare of the abstract state.

Of the greatest importance is the emotional appeal which makes a proposition itself an enduring value sustained independently of the person, of the propounder. Antony applies such an appeal. The proposition: *Caesar was good and noble and has been severely wronged* he endowed with affect generated from a multiplicity of great emotional tendencies, like the tender sentiment, the sentiment of moral indignation, the impulses of greed and gratitude, and what not. Having thus invested his proposals, Antony can vanish from the psychological scene of his audience; his creation remains. In Brutus's case, the matter is different. Though he appeals to a few highly abstract sentiments, the acceptance on the part of his audience of his predications is chiefly contingent upon his hearers' submission to himself. Accordingly, the sustenance of his message in the minds of the Romans is conditioned by the continual psychological presence of himself as the dominating, dignified leader. His message is not a self-contained living agency because it has not itself become a value embraced with desire. While Antony sets up what you might call an autonomous pattern of action, Brutus releases tendencies that he has himself continually to replete with energy.

In minimizing the role of submission as an agent in belief-engenderment, I have perhaps taken an extreme position. That role is not entirely negligible. Appeal to submission is oftentimes very effective in securing the primary attention of an audience. Attention of the audience is indispensable whenever you wish to convey to it a message. Success in inducing belief, however, is attained — as a rule — only if appeal to submission can be withdrawn without allowing the opinion you wish to induce to lose its significance and reality in the mind of your hearers. To state the matter in the terms of a pointed homologue: when choosing my butcher, I may be guided by attractive personal characteristics on his part; but, when enjoying the savory flavour of my steak, I am certainly not enjoying the virtues of the butcher.

The role of the emotional and of the rational principle of belief-engenderment is brought home forcefully when we consider the phenomena of self-deception or of delusion-formation. The deceptive belief is basically emotionally engendered, that is to say, it is entertained because it is desired to be true. People holding self-deceptive beliefs attempt to support these by acts of superficial "rationalization." Rationalization is the very caricature of true rational reasoning. It involves the choice of false premises as well as the inference of false conclusions. Nevertheless, the compulsion to justify the emotionally determined belief even by the mere pretense of a rational consideration of things in relation to one another, indicates how deeply rooted in man's nature is the urge to test the reciprocal compatibility of one's beliefs. The two principles of belief-engenderment continue to mould the beliefs of man throughout life. The primitive tendency to believe what one wishes to be true never leaves man. It conflicts with the tendency to consider true that which is compatible with an already established set of beliefs or, at least, not incompatible with it. The evasion of the conflict lies in rationalization, the buffoonery of valid reasoning.

Whenever enduring beliefs or systems of beliefs are engendered, whether by the emotional or the rational principle, psychological contents become invested with deferent energy. In that capacity, they become vectors in a complex pattern of forces which are directive of adaptive conduct.

To round out the exposé of the growth of human intellect, a few wise words by McDougall deserve quotation: "The structure of every developed mind comprises a multitude of beliefs. Many of these concern particular things and events . . . when we speak of a man's beliefs, we usually mean beliefs of a more or less general nature; in every normal human mind, these are in some degree organized in systems . . .[19] The harmonization of beliefs in a single consistent system is only approximately achieved by those persons who are moved, as we say, by a 'disinterested love of truth.' "[20]

McDougall's last statement suggests that the ultimate unity of everything known can be achieved only in contemplation, that is to say, in an intuition akin to the purely aesthetic or to the purely logical act, the harvest of which — being distinterested in any practical personal concern — would be devoid of reality-concern. A paradox: ultimate truth is useless. Or, *non sequitur:* in youth, we acquire an intellect that we judged to be practical though with a suspended recognition of the aims which in later life it might serve. Mayhap, the ultimate truth if ever intuited will serve goals as yet entirely beyond our comprehension.

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[19] William McDougall, *Outline of Psychology,* p. 414.

[20] *Ibid.,* p. 416.

> The all-embracing truth we men do seek,
> But never reach; and yet there lingers
> In our minds a longing — tense though calm —
> To find the limits of *The All* that is.
> It is an earnest longing, and the pains
> Of its frustration do us not detain
> From ever contemplating distant riddles.
> The meed of our effort and our woe:
> A novel question always, and *in fine,*
> The stark commitment: Who shall ever know?

PART IV

MAN THE CREATOR

CHAPTER XIV

AESTHETIC CONTEMPLATION

THE FOLLOWING propositions seem to be valid of the ordinary Aristotelian logic.

(1) Logic is the systematic knowledge of the necessary forms of thinking; it is not essentially concerned with the topic matters of which we think.

(2) Logic holds that, if the process of thinking be truly consecutive from one term to the other, it must be patterned in these forms.

(3) Being not concerned with the topic matters of thought, logic is not concerned with the truth or falsity of individual propositions.

The cleanest manifestation of logical cognition, probably obtains in the higher mathematics. That is because mathematical thinking reveals each one of the three characteristics of logic here quoted. *Mathematics is not concerned with the things we think about;* its relata are more abstract than the relata of any other branch of systematic knowledge *except the ones of logic itself. Mathematics proceeds in accord with laws of logic, being truly consecutive from one term to the other. Mathematics does not concern itself with the truth or falsity of any propositions.* In support of these statements I quote Mr. E. T. Bell:

"Against all the senseless rhetoric that has been wafted like incense before the high altar of 'Mathematical truth', let us put the considered verdict of the man whom most professional mathematicians would agree is the foremost living member of their guild. Mathematics, according to David Hilbert . . ., is a game played according to certain simple rules with meaningless marks on paper . . . mathematicians pass outside their proper domain when they attempt to give the marks meanings . . .

"Modern mathematics is concerned with playing the game according to rules; others may inquire into the 'truth' of mathematical propositions, provided they think they know what they mean.

"The rules of the game are extremely simple. Once and for all the postulates are laid down. These include a statement of all the permissible moves of the 'elements'— or 'pieces'.

". . . A postulate is not necessarily 'self-evident', nor do we ask 'is it true?' The postulate is *given; it is to be accepted without argument,* and that is all we can say about the postulate itself . . .

". . . It is just like chess . . . Only a very original philosopher would dream of asking whether a particular game of chess was 'true'. The sensible question would be, 'Was the game played according to the rules?'

"Among the permissible moves of the mathematical game is one which allows us to play. This is the assumption outright that the laws of ordinary logic can be applied to our other postulates . . .

"Are the postulates then completely arbitrary? They are not. . . . *The postulates must never lead to an inconsistency. Otherwise they are worthless . . .*"[1]

Supposing that the mathematician's verdict on his own science — as submitted by Mr. Bell — is adequate, the question arises: what is the guiding tenet selecting the relata in mathematical cognition? It is twofold: (1) the adherence to the theorems of certain postulate sets — not as realities but, rather, as propositions the implications of which are to be discovered or unfolded, and (2) the application in unfolding these implications of the laws of common logic.

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[1] E. T. Bell, *The Queen of the Sciences,* Baltimore: Williams, Wilkins, 1931, pp. 15-27.

It is evident that mathematical thinking, thus described, differs fundamentally from the thinking of everyday practical life. In everyday life, our acts of relating experiences with one another are of the utmost reality-concern; our premises are not viewed merely as something the implication of which is to be investigated for its own sake but, rather, as something we hope to utilize in various practical adaptive endeavors. In practical thinking, the criterion of truth is usefulness.

In art we recognize purely formal constituents. These we contrast with the concrete meaning or theme of the art-object. We recognize that certain arts, like music and architecture, are by inherent nature more abstract than, for instance, painting, sculpture, and literature; the former do not represent individual meaningful events or things as, ordinarily, the latter do. This distinction is arbitrary and, in the light of modern art, it tends to break down. For today we find, on the one hand, so-called "pictorial" music (program music) aiming to describe in the terms of musical sequences concrete happenings and, on the other hand, abstract painting, even sculpture, which disclaims any pretension to depict a concrete theme.

We recognize in all arts rhythm, balance, and proportion. When we experience these, that which moves rhythmically is not concretely or individually defined; it is, rather, some abstract cognized but not recognized agency. In the same way, that which balances is a system of magnitudes of an abstract general order, a mass, but not a mass of concrete things: a system of temporally consecutive magnitudes, or a spatial system of some form of homogeneous, though undefined, substratum; and so with that which exhibits proportions — it is again of the essence of an abstract magnitude.

In all arts we recognize harmony and disharmony within units of spatially or temporally related qualities, such as color harmony or discord in the case of some of the fine arts, and tonal harmony or discord in the case of music. In some measure, we behold harmony and disharmony also in literature, whether poetry or prose. Again, these constituents of the art-object are abstract; they have no direct reference to any concrete meaning or concrete theme.

In all arts we intuit a unity of spatial and temporal arrangements; this, perhaps, is the most essential property of any one art-object of any one art-form. The unity depends upon another abstract relation within the art-object, notably, the superordination and subordination of its constituents.

I suggest that, in the aesthetic situation, the act of interrelating these functional parts of the art-object is subjected to a compelling lawfulness equally strict as the lawfulness of mathematical or purely logical progress. This is why one can speak of a logical appeal of art. The compelling laws in the aesthetic unification of form constitute what may be called the "logic of beauty." These laws are extremely difficult to formulate into definitions — as can be done with the laws of logic. The word *closure* would seem to denote — even if only in a vague manner — a law of beauty. The same is true of the word-combination *crescendo-diminuendo* which applies not only to musical progress but to the relating activity in our viewing any kind of art. A second set of terms which I believe express a law of beauty is *thesis-antithesis-synthesis.* The laws which I vaguely surmise and which I attempt to give some measure of meaning by verbal denotation are all laws of progress in aesthetic thinking. Though these laws are evasive and difficult of formulation the appreciator of art senses their coercion and the dependence of beauty upon strict law. The lawfulness makes the progress of the aesthetic act of appreciation as consecutive and compellingly directed as the progress of the mathematical act.

In treating the mathematical act, we inquired into the nature of the tenet that guides it. We found it to be a double one: on the one hand, the laws of logic; on the other hand, the theorems of postulate sets the implication of which is to be revealed.

What might be the tenet guiding progress in aesthetic contemplation? I suggest that it, too, is a double one. As the mathematical act is guided by the laws of logic, so the aesthetic act seems to be guided by the laws of the "logic of beauty." The similarity in this respect between the mathematical and the aesthetic acts does not hold with regard to their respective second guiding tenet. For, while in the mathematical act the latter is the theorems of certain postulate sets, in the aesthetic act it is the dominance of the superordinate member of the art-object. For instance, the dominant of a Madonna by Perugino might perhaps be considered the melancholy facial expression of the Virgin Mother. That dominant, in a peculiar way, compels the spectator to view all subordinate formal constituents of the masterpiece as gestures of melancholy, the contour of the Umbrian landscape, the rhythmic flow of the mantle of the draped Virgin, the subdued greyish brown and greyish green color tone of the whole surface of the painting, and so on. It is the secret of the artist to create form permitting and aiding this metamorphosis of subordinates by a dominant. Perhaps it is what one might call the secret of his style.

Whenever the dominant of an art-object is a concrete thing or theme, we speak of the artistic arrangement upon which depends, in the objective sense, the transformation of subordinate form by the dominant, as the *unity of form and content.* Whenever the dominant is abstract, we speak of the corresponding arrangement as the *unity of the abstract constituents of form.* It is important to note that *while the dominant is always one and never embodies a conflict of meanings, the very meaning of the dominant may be conflict.* This is the case in all tragedy, unfolded whether in drama or other literature, in music, or in fine arts. In tragic art discord of qualities, heteromorphism of motions, unbalance, etc., are used by the great artist as subordinate constituents supporting the dominant.

The act of relating successfully — under the strict compulsion of the laws of the "logic of beauty"—all constituents of the art-object to the dominant, resulting in the felt unity of a multitude, seems to yield a satisfaction of its own. The latter, I believe, is the pleasure in pure form that the aesthetically educated adult derives from art, the pleasure that may be called the *pleasure of the logical appeal of art.*

We have so far been comparing the aesthetic and the mathematical acts of relating items of experience with regard to two logical criteria: (1) abstractness of relata, and (2) compelling consecutiveness of progress. There remains to be considered the third logical criterion fulfilled by the mathematical act. It was asserted that the mathematical act of relating relata is not concerned with the truth or falsity of resulting propositions, in other words, that the mathematical act is devoid of reality-concern. Many authors have held this to be true of the aesthetic act as well. "It is of the essence of the aesthetic attitude," writes McDougall, "that we do not inquire into the reality of that which we contemplate."[2] And Alexander: "The work of art asks not to be believed as we believe in things of the practical world in which we live, submitting ourselves to it. In art, according to Bacon's phrase, we submit to ourselves the shows of things. We create an autonomous world, a blending of the physical with ourselves, and therefore a new reality within the so-called real world; neither believed nor disbelieved but entertained and therefore not acted upon . . .[3] The artist or the spectator do not ask if the Hermes is really alive; they raise no question of true and false; they see it so."[4]

Aesthetic wholes, aesthetically enjoyed, are undoubtedly viewed independently of reality-concern. Nevertheless, there always enters into the act of aesthetic appreciation affirmation of some of the constituents in the terms of which the whole is conceived.

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[2] *Outline of Psychology,* p. 376.

[3] Samuel Alexander, *Beauty and Other Forms of Value,* p. 37.

[4] *Ibid.,* pp. 38-39.

But for the affirmation of the reality of such constituents, the total aesthetic proposition would become meaningless. These subordinate constituents are cognized or rather recognized as real, a fact which indicates that in the aesthetic act enter a simple reproduction by similarity and also a simple reproduction of similars (apperceptive synthesis). These acts of reproduction, however, do not characteristically distinguish aesthetic cognition from practical cognition. Yet, without them no art-object would ever become thematic or have a concrete form; a line would not be apprehended as the contour of a human face or as a significant gesture, nor a tonal sequence as an expression of jubilation. Such acts of apperception prepare the way for or are inseparably interwoven with the great general apperceptive act by which the art-object becomes animated and attains the character of a living, striving microcosm.

The role of the endorsed constituents can be best illustrated by examples from literature; nevertheless, it probably has its share in any one art-form. Take, for instance, any narrative poem. Though at the time we enjoy it aesthetically, we do not inquire into the truth or falsity of the story it tells us (the story as a whole being of no reality-concern) most of the words that constitute the poem are meaningful and relate no realities. In the nursery rhyme about Tom, the piper's son, who stole a little pig, the words *piper, son, stole, little,* and *pig,* as isolated denominations, all refer to realities that, implicitly, we affirm, albeit the total event is neither believed (positively or negatively) nor doubted. In other words: as isolated units, the terms in which we think aesthetically stand for simple objects or relations the reality of which we assert. There may also be subordinate propositions in aesthetic chains of events to which we defer. Some of these, as subordinate units, may be propositions of positive or negative belief, others may be suppositions the reality of which is undetermined in the sense of being neither believed (positively or negatively) nor doubted.

Suppose there occurred in *Alice's Adventures in Wonderland* the following passage: "If the rabbit had not had a waistcoat with a pocket, he would not have had any place in which to put his watch." This would be a suppositional proposition which, no doubt, we would affirm, though the total sequence of events in the episode in which it enters would be of no reality-concern, being the object merely of aesthetic contemplation. Or, suppose that in the tale of the *Merchant of Venice* we should find this passage: "Portia's suitors, in order to get her father's consent to marrying her, had to choose a certain one of three boxes; accordingly, if the silver box were the right one, and Bassanio chose that one, he would get her in wedlock." This proposition, in a sense, we would affirm although it enters into the story of a series of events that is of no reality-concern. It contains two subordinate suppositions which are undetermined: "the silver box is the right one" and "Bassanio chooses the silver box."

If you are making up a fairy tale yourself in order to please your little child, or if you actually create artistically, although the reality of your total creation is of no concern, you still defer at least implicitly to subordinates in your creation.

G. F. Stout has suggested that in the abstract arts, music and architecture, the divorcement of apprehension from reality-concern is more complete than in the literary arts, in painting, or in sculpture. This difference he explains by the fact that the latter arts are more "imitative" than the former.[5]

For two reasons I am not inclined to over-emphasize the difference to which Stout refers: first, even the most concrete artistically-presented theme as a whole is viewed without reality-concern in the aesthetic attitude; and second, even the most abstract artistically-presented whole, in so far as it symbolizes an effective gesture — as, no doubt, music and architecture might do — becomes, in a measure, literary or thematic.

We have seen how the aesthetic act fulfills, in addition to the first and the second, at least relatively, also the third of the logical criteria fulfilled by the mathematical act. This establishes, I believe, a fairly close resemblance between the aesthetic and the logical act of contemplation, a resemblance, indeed, that extends to three fronts: (1) abstractness of relata, (2) lawful consecutiveness of progress, and (3) negative-reality concern. I quote one mathematician, E. T. Bell, and one aesthetician, Samuel Alexander, who have voiced recognition of that resemblance.

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[5] G. F. Stout, *Analytic Psychology,* Vol. I, pp. 106-107.

(Concerning mathematics): "The requirement of independence for our postulate set is not dictated by necessity but by aesthetics. Art is usually considered to be not of the highest quality if the desired object is exhibited in the midst of unnecessary lumber. Many an otherwise good cathedral has been ruined by too many gargoyles."[6]

"Scientific work, especially mathematical work which is purely conceptual, may indeed possess the appearance of beauty, because of the inner coherence which it shares with fine art, or may resemble a piece of architecture . . ."[7]

It is evident that, though the mathematical act and the aesthetic act present close resemblance, they are also — in important respects — vastly different. The most conspicuous difference, in my opinion, is connected with the so-called affective appeal of art; an appeal that is not shared by mathematics or by pure logic.

Art has an affective appeal. That theorem — if it has any meaning at all — would seem to imply that, in some way or the other, an art-object stirs us to experience affect. We may infer, forthwith, that experience of affect is inherent in aesthetic experience, a proposition that would be questioned by no one who has enjoyed, for instance, the impassioned music of Wagner, the gigantic dynamism of Michelangelo's "Last Judgment," or the dramatic intensity of Aeschylus' "Prometheus."

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[6] E. T. Bell, *The Queen of the Sciences,* pp. 26-27.

[7] Samuel Alexander, *Beauty and Other Forms of Value,* pp. 51-52. (Cf. my article, "Logic and Beauty," *Char. and Pers.,* VIII, 1934.)

On an earlier page, I have briefly outlined the role and conditions of affect in practical life. I have exhibited affective experience as one of the three sub-acts of any mode of practical conation, its purpose being to indicate the nature of a need requiring satisfaction and progress or regress in the overt activity seeking to effect that satisfaction. Such a description makes it fairly obvious that the function of affect in the aesthetic situation must be very different from its function in practical life. For, the aesthetic situation does not involve striving or desire in any practical adaptive sense. This fact has been expressed by a large number of writers as the theorem that "art lacks utility and purpose." H. S. Langfeld, rightly, treats the theorem as a question of man's attitude to life, on the one hand, and to art, on the other.

". . . We value most things for what we can do with them, for the benefit we derive from them, but in the enjoyment of art . . . all such materialistic thoughts are absent. The object of beauty is pleasing in itself . . . There is no doubt that ideas of use, perfection, possession, etc., interfere with . . . the perception of beauty."[8]

"The aesthetic attitude . . . is diametrically opposed to one's usual attitude toward one's environment, the one which one learns to assume by reason of the struggle for existence. In this latter attitude, we are continually opposing forces. Our organism becomes set or adjusted to meet and overcome obstacles, while . . . the aesthetic set is directed toward experiencing in ourselves the various relations which the elements of the object have to one another and not to our own independent action in regard to them . . ."[9]

Art, then, has no direct purpose other than to be enjoyed; the affective experience constituting a component in aesthetic enjoyment is appreciated for its own sake (contemplated) and not — as in the case of practical everyday striving — as the indicator of the nature of an acute need requiring immediate satisfaction.

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[8] H. S. Langfeld, *The Aesthetic Attitude,* New York: Harcourt, Brace, 1920, p. 45.

[9] *Ibid.,* pp. 64-65.

Upon first view, the apparent autotelic enjoyment of affect would seem a singular act. The question arises: is it unique for the aesthetic situation? By no means. There is a whole array of non-aesthetic situations when people enjoy affective experience, as it were, for its own sake; all the situations when they indulge what, in an earlier chapter, I have called a *taste for affect-gain.*[10]

I have briefly described the following non-aesthetic varieties of taste for affect-gain: (1) the desire to inflict injury or to observe injury being inflicted upon the defenseless (taste for cruelty); (2) the desire to watch sensational events such as fires, accidents, operations, deliveries, etc., (3) the desire to watch dangerous games; (4) the desire to bet on games of all kinds (taste for gambling); (5) scandal-hunger; and (6) the desire continually to complain of one's own misery. I have also made a number of general remarks concerning means of indulging a taste for affect-gain.

(1) A person may indulge his taste for affect-gain by exposing himself to exciting situations. This he can achieve in two ways, on the level of reality or on the level of unreality.

(2) Whenever a person — for the sake of indulging his taste for affect-gain — seeks real exciting situations, he does not choose situations in which his welfare requires adaptive cognitive or adaptive locomotive activity on his part. Rather, he seeks situations that offer him safety and at the same time strongly stirs his affects.

(3) When a taste for affect-gain is indulged on the level of reality, the exciting situation sought is frequently one in which affect is sympathetically induced by the observation of affective conduct on the part of others (indirect excitation of affect).

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[10] Cf. Helge Lundholm, "Taste for Affect-gain." *Pschol.* Rev., 45, 1938.

(4) Rule (3) is not without exceptions; for affect-gain might be secured on the level of reality through direct excitation of affects such as admiration, anxiety, pity, moral indignation, and others.

(5) In indulging his taste for affect-gain on the level of unreality, a person has unlimited liberty. Any imaginary situation, even one of the most severe personal jeopardy, might be utilized in the pursuit of affect-gain.

Insofar as great emotional art and also sentimental art have an emotional appeal, affect-gain is a factor in appreciation, and love of art a variety of taste for affect-gain — a variety, it is true, far higher on a scale of dignity than any one of the non-aesthetic varieties. In fact, the five general statements concerning non-aesthetic affect-gain have application also to the aesthetic situation. A point-to-point comparison reveals minor — though important — differences, but, more conspicuously great similarities between the two modes of indulging the taste.

(1) No art-object, whether abstract or concrete, whether a musical composition, a painting, a poem, a piece of sculpture or architecture, or a work of stage art, would ever stir affect in a spectator unless the latter animated the art-object, projected or felt into it something of his own nature as a living, striving being. This act shall be further discussed presently. As the animating act is an act of imagination, it follows that — in aesthetic affect-gain — we cannot speak of an exciting situation on the level of actual reality.

(2) It would seem evident that the aesthetic situation is not one that threatens the security of the spectator; in other words, it is a situation in which he might allow his affect to be stirred in perfect safety.

(3) An art-object might be apprehended as an emotional or otherwise affective gesture. In this case, its affective appeal will be indirect, that is to say, it will be transmitted through sympathetic contagion.

(4) An art-object might also be apprehended as a situation or event directly saturated with affect. In most instances the art-object has a conjoint direct and indirect affective appeal.

(5) The imaginative (or reproductive) component of aesthetic appreciation is restricted to the simple recognition of perceptual patterns and to the act which conditions animation and thus the intrinsic meaning of the art-object. Centripetal associations are likely to disrupt the aesthetic attitude. For instance, if, contemplating a statue of the suffering Job, you cogitate: "Have I not suffered like him?" you are no longer in an aesthetic relation to your art-object. This restriction of the imaginative act constitutes an important difference between the aesthetic and the non-aesthetic indulgence of taste for affect-gain.

Fundamental in all aesthetic enjoyment is that act of expanding the ego into the art-object which constitutes *Einfühlung* or animation (Titchener's *empathy*) and which results in our viewing the art-object as a being of the nature of our own striving self. This has been spoken of by Lipps as the projection into the art-object of our *inner doing*. "Das 'Tun' ist *überall* an sich ein rein *inneres* Erlebniss . . . Ich bezeichnete als das Eingefühlte mein inneres Tun . . ."[11] I prefer to term it the projection into the art-object of our subjective striving self.

The act of animating the art-object is an instance of the relating act which we have called *apperceptive synthesis*. But it is an implicit apperception in which neither the relating act nor the relata, as such, are apprehended. Only the result is experienced, the living art-object. In other words, the act of animation is intuitive. If it should become explicit, the aesthetic situation is destroyed, and one no longer enjoys the beauty of the art-object.

To animate one's environment is not an act confined merely to the aesthetic situation. We do it in many situations of everyday life. But the peculiar manner and measure of aesthetic animation distinguish it from the cases of non-aesthetic animation. The understanding of our fellow men involves a measure of animation in the sense of attributing to them something of our own nature. Frequently we ascribe to higher animals attributes of our own. However, in practical life there is a limit to our acts of animation; the restriction that actually accounts for the civilized adult's distinction between animate and inanimate nature. This distinction is not apprehended by the child and by primitive man. The child and primitive man impute into non-living things and material events their own nature as striving and thinking beings. In the aesthetic situation, the civilized adult does the same; in this respect the aesthetic attitude is regressive.

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[11] Theodore Lipps, *Grundlegung der Ästhetik*, Leipzig: Leopold Voss, 1914, pp. 128-129.

The aesthetic animation of the art-object — and, perhaps any act of animation — might be considered an expansion of the subjective striving self. In the case of aesthetic animation, it is an expansion through which the original self is lost. The person of the spectator seems to become submerged in and to vanish in a larger living unit. I do not think that a similar loss of personality obtains whether in the case where the civilized adult imputes his own nature into his fellow man or where the child or the primitive man animates any object in his surroundings; for the child and the civilized and primitive man alike will continue to act independently and adaptively toward the animated objects.

It is by virtue of the animating act that the art-object, or any object of beauty, comes to stand for or to symbolize an affective gesture or an affective situation. For instance, it is by virtue of that act that a pictorial or statuary representation may be apprehended as a gesture of grief, a melody or a poem as a gesture of joy, a building — viz., of the baroque style — as a gigantic conflict, and a gothic cathedral as a frozen hymn. Standing for emotional gestures or for affective situations, art-objects might stir affect (indirectly or directly) in a spectator. But this retroactive effect emerging from the animated art-object is not experienced as an exchange between object and subject, because the subject has expanded and lost itself in the higher aesthetic living unit in which the beautiful object is also an integral part; it is experienced, in fact, as an impersonal event in a world of which the focal point is the dominant of the art-object. The analytic description of that aspect of the aesthetic act which is concerned with the so-called "affective appeal of art"— a description which already embodies a considerable amount of very specific theory — has necessitated the introduction of a temporal sequence among different phases of the act. This might be an abstraction. In the real act, recognition, animation, and retroactive sympathetic contagion are probably intricately interwoven in mutual, inseparable inter-penetration.

Are logical and affective appeal two independent factors in beauty? By no means. If that were the case the aesthetic law of unity in the multitude would be a mere meaningless phrase.

The logical appeal of art is the appeal which stirs us to contemplate and in contemplation to inter-relate — under the strict guidance of aesthetic laws — abstract form-qualities of the art-object with one another and also with the theme, or concrete form, of the art-object. The possibility of that unification is contingent upon the pattern of the art-object — as given by the artist. The pleasure of logical appeal is the pleasure of success in the act of unifying hierarchically all constituents of the art-object.

Here it should be noted that not only the concrete but also the abstract form-qualities in any one art share in the metamorphosis effected by the animating act. Indeed, it is by virtue of the animating act that these latter come to form rhythm, to balance, to offer proportions, to join in harmony or to jar in discord, and to dominate or submit to domination; for it is through that act that they come to symbolize, in an abstract sense, activity, striving, life, thus becoming the potential carriers of "affective tone." I have suggested that the superordinate member of, or dominant in, any one art-object is always that in the art-object which stands paramountly for an affective gesture. This is true whether the superordinate symbol is concrete, "thematic"— like a human face expressing grief — or abstract — like a contraposition of tonal magnitudes expressing raging conflict. It is the affective tone of the dominant that determines the mode in which one apprehends subordinate functional members of the art-object, causing one to experience these as agencies which lawfully lead up toward the dominant, supporting continually the affective tone of the latter. I remind here of the example of the Madonna by Perugino. In that work of art the facial expression of the Virgin Mother was considered to be the dominant. That facial expression of mild melancholy, it was suggested, in turn determined the affective tones of subordinate constituents in the masterpiece, compelling one to view also as gestures of melancholy, for instance, the contour of the Umbrian landscape, the rhythmic flow of the mantle of the draped Virgin, the subdued greyish brown or greyish green color tone pervading the whole painting, and so forth. It was held to be the secret of the artist's style to offer patterns permitting this secondary metamorphosis of subordinates in an art-object by a dominant. This interpretation of the general law of unity in art I formulated as early as 1919, expressing the law as follows: unity in art depends essentially upon the operation of all form-elements in one and the same cardinal emotional direction.[12]

The strength of affective appeal differs in different styles of art. Romantic art is generally considered to have a stronger affective appeal than classical art. In architecture, indeed, baroque has a stronger emotional tone than the preceding renaissance style; Bramante's project for St. Peter appeals far less to affect than Michelangelo's executed central church. In sculpture the style of Phidias is less affective than the style of Scopas which in turn is far less emotional than the style of the master of the Pergamon frieze; and, when we turn to painting and music, Tintoretto's art has a stronger affective appeal than Giorgione's, and Wagner's music a stronger affective appeal than the music of Mozart. I would suggest, however, that all art in some measure exerts an affective appeal beyond the satisfaction resulting from the act of aesthetic synthesis. Unless there is such appeal, the art-object loses its aesthetic character and becomes a sheer logical-mathematical object; for this, I believe, is the very conspicuous difference between the logical-mathematical object, on the one hand, and the aesthetic object, on the other — that the items inter-related in the former lack affective tone, while those united in the latter are emotionally toned. This in itself implies that the aesthetic act — though in important respects it resembles the mathematical act — unifies items of experience that always — even in the most abstract art — are more thematic than the items inter-related in the mathematical act.

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[12] *Om Objektiva Faktorer i Konsten,* Lund: Gleerup, 1919, pp. 200-210. My interpretation was foreshadowed in an earlier article, "Om Objektiva Faktorer Konsten," *Konsthistoriska Sällskapets Publikation,* 1917.

The affective appeal of art — by virtue of the close association between affect and practical desire — is tending, through and through, to break the aesthetic attitude of pure contemplation; for it tends consistently to reproduce thoughts of desirous ego-concern, imagery beyond that which is required for the sheer recognition of aesthetic objects or events. One's ability to maintain the aesthetic attitude even in the face of a strong emotional appeal on the part of an art-object is, I believe, largely a matter of aesthetic education. An important — though by no means exclusive — component of that training would seem to be the development of ability to relate affective with non-affective experiences as if the former were psychological objects among objects. This is a different way of stating the decentralization of affect which makes affective experience the object of contemplation; affect becoming detached from personal desire and objectified in the art-object.

No doubt, contemplative cognition, that is to say, the act of relating, for its own sake, objects with one another and with the universe at large, calls for an explanation, *i.e.,* it requires the establishment or discovery of a motivation prompting it. I submit that general curiosity constitutes that motivation and that general curiosity prompts purely aesthetic as well as purely logical thinking.

Though the contemplative relating of objects to one another does not serve any practical end, it may not be entirely unguided. In the laboratory situation, as we remember, the cognitive act was guided by instructions; in the mathematical attitude, it was guided by the conventional rules of "the game of mathematics" as laid down in the postulate set, also by the laws of plain logic; while, in the aesthetic attitude it was guided by other rules incorporated in the laws of "the logic of beauty" and in the supremacy of the dominant. Such guidance does not mean that a novel motivation is added; it means, rather, that the cognitive act prompted by general curiosity is, in each case, subjected to, or bridled by, certain restrictions.

Whenever cognition prompted exclusively by general curiosity (artificial cognition) proceeds relatively unbridled by restricting rules, its progress seems to follow a path of least effort or greatest economy. Thus it is likely to yield such utterly simple acts of relating items of experience as the reproduction by superficial similarity of appearance or the reproduction by spatial or by temporal contiguity. Reproduction by similarity is particularly conspicuous in the "flight of ideas," while reproduction by temporal and by spatial contiguity prevails in the "passive reminiscing." The economy principle is also revealed whenever we examine the objects singled out as relata; these, often, are relatively meager in meaning — sometimes being merely figures on a ground (cf. ch. IX, pp. 278-79). In comparison, the objects perceived in the course of practical cognition whether as goals, or as obstacles, or as means, are infinitely richer in meaning.

Even when contemplative cognition is bridled by fairly complicated rules as, for instance, in the aesthetic attitude, the economy of the act is, nevertheless, apparent. Constituent parts in aesthetic wholes are rarely apprehended merely as abstract figures on a ground; they are many times recognized as meaningful psychological objects. An instance would be the case when a contour is recognized as portraying or meaning a human face. This recognition, however, is gained by a comparatively simple act of reproduction by similarity. The apperceptive syntheses which result in poetical metaphors might seem to constitute an exception to the parsimonious tendency, because the objects which are coordinated as similar in that act frequently seem very distant and different from one another: as when a young girl is likened to a lily. The distance in such a case between the objects co-ordinated is not as great, however, as it superficially appears; for we must remember that it is immensely reduced by the act of aesthetic animation that precedes the apperceptive synthesis. The animated lily has a closer resemblance to a young girl than that lily which is merely a botanical specimen. The animating act itself has been described earlier as an apperceptive synthesis. Even that apperception in which is obtained the living quality of the art-object is not a complex but, rather, a simple and primitive act. This would be indicated by its close kinship with the naive animation of things and events on the part of the child and the primitive man. Animation, in a sense, is parsimonious, for it represents the interpretation of all things and events in the terms of that which is best and most immediately known of all psychological objects, namely, one's own subjective striving self.

The fairly complicated rules of mathematical and of aesthetic cognition — though they restrict respective cognitive acts, diverting them from the most parsimonious forms of dissociative-associative selection — at the same time facilitate the cognitive unification of a multitude of items into a whole. This is no doubt true both of the mathematical and of the aesthetic rules, though I shall be able to comment further upon the question only in regard to the laws of "the logic of beauty."

The aesthetic laws are laws of order which the creating artist considers in arranging the patterns of his art-object; if these laws are properly exhibited in his creation, they will guide the spectator in the cognitive unification of even highly complex patterns. Thus, they facilitate the act of aesthetic contemplation, furthering our success in the unification of all parts of the art-object and so, in turn, they condition the pleasure of the so-called formal appeal of art. These laws of order rule out option from the progress of the cognitive act; leaving — so to speak — the future fully explicit in the present; relieving the contemplating spectator of any necessity to infer the proper course of his act. The artist, while creating, might have to face alternative routes of progress; the spectator, in contemplation, does not. The composer, I am told, might sometimes be in doubt as to the completion of a musical theme because option is possible. The art-object finally achieved — its pattern finally given — there is no option to interfere with or to delay the cognitive act on the part of the contemplating mind. The latter state of affairs gives rise to a delightful experience of freedom and ease.

CHAPTER XV

AESTHETIC CREATION

MOST WRITERS on the psychology of aesthetics have divided the field of inquiry into two main problem groups:

(1) The problems of aesthetic enjoyment or of appreciation.

(2) The problems of aesthetic creation or of the art-impulse.

It is hardly necessary to call to attention that a sharp distinction between the two is untenable; nevertheless, different authors have presented their treatises with emphasis upon either one or the other of the problem groups.

I have argued that the sentiment prompting the contemplative act of aesthetic appreciation is the impulse of general curiosity functioning independently of special conation; Samuel Alexander, contrary to my contention, has suggested that the aesthetic sentiment is to be identified with the creative impulse functioning on the level of contemplation. Alexander writes:

"We cannot proceed from appreciation to creation. But we can proceed from creation to appreciation . . . appreciation of beautiful art is to repeat the creation of it, so far as the spectator can. The work of art throws the spectator back into the frame of mind in which the artist produced it . . . There is . . . no difference in kind between aesthetic appreciation and aesthetic creation. The one is the pale shadow of the other, as passively at the suggestion of the accomplished work the spectator recovers the creator's mind.[1]

What would be the upshot of a comparison of the two alternate views? My own and Alexander's, in brief, would seem to be as follows:

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[1] Samuel Alexander, *Beauty and Other Forms of Value,* pp. 29-30.

(1) My view, though it offers a sufficient explanation of the act of aesthetic appreciation, leaves the act of aesthetic creation a mystery.

(2) Alexander's view purports to explain both creation and appreciation, but it achieves that task only by arbitrarily disregarding the evident difference between the two acts; claiming that appreciation is merely a pale shadow of creation.

In summary: The problem remaining unsolved in Alexander's theory is the problem of the difference between appreciation and creation, while, from my standpoint, the immaculate problem concerns the fundamental nature of the creative impulse. I shall suggest a compromise maxim integrating, in part, each one of the two views mentioned, a total aesthetic theory that — as fully as can be presently achieved — will account for the act of aesthetic appreciation as well as for the one of aesthetic creation.

Reading between the lines of my ontological-epistomological world-view, all cognition or apprehension is creative in the sense that, at all times, it is an interpretative act of mind focused upon fractions of the ultimately imponderable universe (X). Does the supposition of the creativeness of all cognition (fundamentally the creativeness of all conation) rule out the necessity for postulating a separate constructive impulse? I venture to reply, "No."

One can observe in man, as well as in a large number of infra-human species, a tendency to create objects of a relatively permanent or enduring nature. That obvious tendency justifies, I believe, the postulation of a special motivation. It can hardly be derived from any other special impulse and, to be sure, general curiosity itself though, in a sense, creative like all conation, does not prompt the creation of enduring objects. The motivation urging the latter tendency we may, more properly, call the independent constructive or creative impulse.

I suggest that all permanent objects created under the coercion of that impulse fall into one or the other of two great categories, auxiliaries on the one hand, art-objects on the other. Script, created by man, is a peculiar auxiliary, permanent in itself when engraved on stone or written on paper, through which indirectly all thought can be made permanent; practical as well as aesthetic-logical thought. Animal creations are entirely of the order of auxiliaries; the most conspicuous of these being nests or shelters of one kind or the other. Only very rarely do animals create auxiliaries that are not of the type of the shelter. Man, on the other hand, creates auxiliaries of the most varying kind from the tiniest sewing needle to the vastest electrical power station. Man creates also art-objects useless for any other purpose than that of being contemplated.

Once the impulse of creating enduring objects is postulated, it becomes possible to apply it, though only in general terms, to the interpretation of both the similarity and the difference between aesthetic appreciation and aesthetic creation. The act of aesthetic appreciation is prompted by general curiosity guided by aesthetic laws of order which facilitate the unification of a multitude of constituent parts of experienced patterns. The aesthetic pleasure is the pleasure of success of that act of unification. The act of aesthetic creation is prompted jointly by the constructive impulse and by general curiosity, each guided by the same laws of order. In creation the contemplative cognitive act inseparably transfuses the actual act of shaping a material; imaginative image and perceptual image in the various stages of creation are inseparably intertwined. The pleasure of creation is the pleasure of successful cooperation between the two impulses. The course of creation, however, is not free from pain; for its progress entails choice; and temporary failure may ensue before final success is reached. Artistic creation is the birth, with all its labor, of an idea embodied to perfection in enduring material form.

The deepest problem of aesthetics is an evolutionary problem. It concerns, on the one hand, man's shifting from practical to contemplative aesthetic cognition and, on the other hand, man's shifting from the creation of auxiliaries to the creation of art-objects. I can, however, offer some tentative suggestions — I admit, only superficial ones — as to the course of the transition from the practical to the aesthetic acts.

Let us recall that all contemplative cognition is not aesthetic contemplation. Passive reminiscing is an instance of non-aesthetic contemplation. From the viewpoint of our theory, it would be perfectly possible that contemplation might be directly instigated by some event in the non-mental continuum that stirs general curiosity without coincidingly stirring any one special conation. It is fair to assume, then, that man knew contemplation before he ever contemplated objects aesthetically; in other words we may assume that non-aesthetic contemplation has been prior in the evolutionary course to aesthetic contemplation.

It is a fair assumption, also, that beauty in some form might have been discovered during non-aesthetic contemplation. This would mean that, at times, contemplation would appear associated with a peculiar pleasure. To begin with, it might be on occasions of contemplation of nature, but it might also be in the contemplation of a man-made auxiliary, an article of ceramics or what not. The pleasurableness of form which, in primitive instances, combines utility with abstract qualities of beauty, might then prompt man to reproduce that form. Repeated accidental experience of beauty in the contemplation of auxiliaries might, so to speak, develop in primitive man an aesthetic attitude of appreciation, and out of that attitude might develop the tendency to construct not merely for the sake of utility but also for the sheer sake of contemplation. This briefly sketched possibility of the origin of aesthetic contemplation and of aesthetic creation is in harmony though by no means identical with a view propounded by Yrjö Hirn. Hirn has written a book in support of the proposition that, from the ethnological standpoint, art objects emerge from auxiliaries, as man, so to speak, forgets the utility of the auxiliary and makes it the object of autotelic contemplation.[2]

I suggest that even in the most primitive aesthetic contemplation the cognitive act is guided by the laws of order of beauty; these laws, at the time of the discovery of beauty, accidentally happening to underlie the pattern of a contemplated object. How have these laws themselves originated? The only answer that can be given is to apply to beauty and its laws what a logician, Mr. Davis, has said about logic and its laws: ". . . logic does not invent laws . . . it merely discovers and unfolds the strict necessities that exist in the very nature of mind and things. . . ."[3]

Unfortunately, the view of the origin of aesthetic contemplation and of aesthetic creation, submitted here with the utmost hesitancy, is in important respects inadequate to the problem upon which it pretends to throw light. For it still leaves unbridged a tremendous gap between the aesthetic life on the part of primitive and on the part of civilized man. Assuming that primitive man accidentally discovers beauty at times of non-aesthetic contemplation, begins to value beauty and so begins to reproduce beauty for its own sake, this hypothesis offers a possible psychological explanation of the transition from practical activity to aesthetic activity of only the simplest type.

The view that aesthetic creation is an act of sublimation is not a novel view. It might have originated with Freud; to be sure, it holds a prominent place in the aesthetic discourses of psychoanalysts. I adhere to the view, though I do not share in a large number of fantastic notions with which it has become associated in the literature referred to.

The sublimation inherent in aesthetic creation is actually a sublimation of a specific kind differing in certain respects from the more common sublimations of impulsive life upon which rests all harmonious group formation among men. In most non-aesthetic sublimation, the sublimating agency raising man's conduct to a level ethically or socially higher than the level of outlet of our primitive drives, is — as I have suggested elsewhere[4] — the protective sentiment. In aesthetic sublimation that would not seem to be the case; for here, the sublimating agency is the aesthetic sentiment, the sentiment which, in case it prompts artistic creation, is constituted of general curiosity, on the one hand, and constructiveness on the other.

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[2] Yrjö Hirn, *The Origins of Art.*

[3] N. K. Davis, *Elements of Deductive Logic,* New York: Harper & Brothers, 1896, p. 7.

It is, I believe, only by acknowledging that aesthetic creation involves sublimation that we can fully understand the implication of the expression "art the reliever." From the viewpoint of my hypothesis aesthetic creation is a "reliever" in two senses: Firstly, it ab-reacts the energy of passions; secondly, it "intellectualizes" or turns into objects of contemplation the experiences, cognitive as well as affective, which are generated by the impulses of the passions; any one feature of this process can be explained by drainage of energy. Hirn, who has recognized the liberating effect of the contemplation of one's own emotional states and their causes, writes concerning "art the reliever":

". . . When a poet seeks to give shape and form to his own sufferings by means of fiction, the relief he obtains is no doubt in part an effect of the diversion of activity into channels of expression. But to a still greater degree it may be the result of the healthful influence exercised by the contemplation of objective reality in the finished work of art."[5]

It has been suggested that there is an element of relief or ab-reaction not only in aesthetic creation but in aesthetic contemplation as well. If this be true, as I believe it is, it would be proportional to the measure in which the art-object "touches off" fundamental human impulses that have been inhibited or repressed in the struggle for practical adjustment to necessary conditions of life, particularly group-life. In aesthetic appreciation, these impulses might be given a sublimated outlet in the act of contemplation prompted by general curiosity functioning under the guidance of the laws of order of beauty. The cathartic effect would be the results of the ab-reaction of energy of such repressed desires and, possibly, also of the intellectualization of painful semi-conscious imagery and thought which these desires might have generated.

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[4] Helge Lundholm, *The Manic-Depressive Psychosis,* Durham: Duke Univ. Press, 1931, ch. II.

[5] Yrjö Hirn, *The Origins of Art,* pp. 103-107.

A considerable number of artists, when conceiving their own state of mind as inspired, have meant that they were under the influence of superhuman powers, even of divine power.

> If there be good in what I wrote,
> Thy hand compelled it, Master, Thine—
> Where I have failed to meet Thy Thought
> I know, through Thee, the blame was mine.[6]

From the standpoint of my ontological-epistemological hypothesis, so-called "divine inspiration" is at least a logical possibility. As may be remembered, I have conceived the mental continuum as a hierarchical arrangement of monads, the supreme monad constituting the "philosopher's god." I have also suggested that events might be continuous within the mental hierarchy. This would allow for the possibility that individual human acts might be instigated and influenced by events originating in a part of the mental sphere that is not the one of the acting individual's own limited mind. Anatole France has written a remarkable book, *Sur la Pierre Blanche,* the large middle section of which consists of a description of the life on Forum Romanum on a day all but two thousand years ago. The narration is set forth with such a convincing verve as to make the reader feel that through our contemporary master of letters speaks the voice of an observer of the time of Ancient Rome.[7]

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[6] Rudyard Kipling, "My New-Cut Ashlar," *Rudyard Kipling's Verse 1885-1918,* New York: Doubleday, Page, 1921, p. 580.

[7] Anatole France, *Sur la Pierre Blanche,* Paris, Calmann-Lévy, 1905.

Many other vivid portrayals of the past can be found in the great literature of different epochs. Are the authors of these actually inspired in a sense beyond the sheerly symbolic one? Presently, we can answer that question neither in the affirmative nor in the negative, but, in the name of fairness, we can suspend our judgment with an open mind. In principle, the affair would not be too remote from the one where, allegedly, a "control" communicates with living beings through a "medium."

At the very end of the seventh chapter of this work, a statement was made to the effect that ". . . man is probably capable of spontaneous conation and perhaps even of inspired conation. Neither of these two forms of striving is called forth by adaptive need or necessity; they are not evoked by any activating event within the physical continuum. As human acts, they are closely related to our creative acts; the attribute of creativeness, I have suggested, is the most uniquely human of all Man's attributes. Much more shall be said about spontaneous and inspired action as well as of creation in a later part of our treatise." The promise of the last sentence is by now fulfilled.

The re-quoted passage followed immediately upon a demonstration in the terms of our basic psychophysical-interactionism diagram of three types of human action: (1) reflex action; (2) action prompted by instinct or sentiment; and (3) action prompted by instinct associated with appetite. Of these three types of action, the first one was purely physico-chemical, whereas the second and the third were mental and in their character adaptive. In order to elucidate two more types of human action and also in order to complete the record of utility of our basic diagram, I propose to depict, in the terms of the latter, on the one hand, spontaneous activity and, on the other hand, inspired activity.

In the diagram designed for that purpose (Fig. 29), there are no activating events originating in the physical continuum; no environmental occurrence requiring adaptation is present to stir conation. On the other hand, there are indicated two activating events, (A) and (A¹), the former originating within the finite mind of the individual himself, the latter at a point in the mental continuum outside his own mind. The reactive event

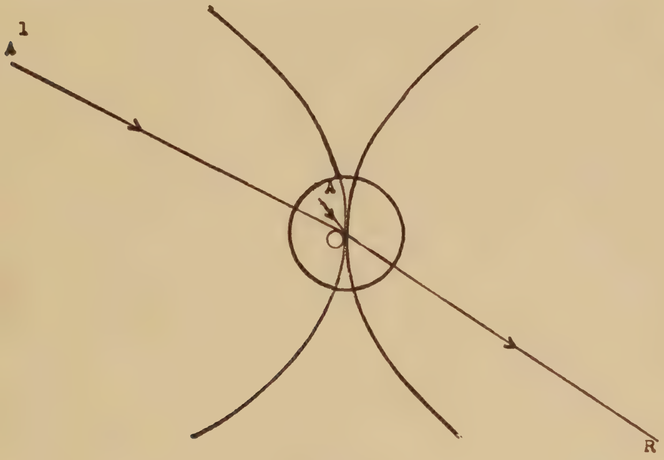

Fig. 29

needs only one representation (R). The little disc to the left of the mathematical point in which the two arms of the hyperbola meet, like in all earlier applications of the diagram, stands for the mental acts of thinking and of experiencing affect instigated by an activating event and guiding a reactive event. Like the latter, these mental acts, in our present case, require only one single representation which is common to the two types of conation concerned. The progression (A - R) stand for the truly spontaneous act. Action is not called for by biological necessity, that is to say, by an activating event in the physical continuum requiring adaptation; it, and the idea guiding it spring, instead, spontaneously from the individual finite mind itself. The progression (A¹ - R) stands for the inspired act. Like in the case of the spontaneous act, action is not called for by biological necessity — by an activating event in the physical continuum — but, unlike the merely spontaneous act, it does not spring from the individual finite mind itself; it is instigated by some event in the mental continuum beyond the latter. In case we wish to depict, in the terms of our diagram, divine inspiration of human action, we have to think of the line (A^1), symbolizing the activating event in inspired action as extending infinitely leftward; this will denote its mainspring in the nth value-hierarchy: the philosopher's God. The close connection between spontaneous and inspired action, on the one hand, and artistically creative action, on the other, becomes evident by the criterion of each of being independent of adaptive necessity.

The message of our two chapters on man's aesthetic endeavors, especially his aesthetic creations, in addition to the one of our tenth chapter dealing with man's invention of practical auxiliaries, should have convinced us by now that the greatest gift of the Biblical God to man, His image, was the power of creativeness. *Lector benevole!* Was it not so?

PART V

METAPHYSICAL

> Science has its own questions and answers: Whither, and How — but beyond science is the not less inevitable question: WHY?
>
> —Sir J. Arthur Thomson,
> Introduction to:
> *The Great Design.*

CHAPTER XVI

WHENCE AND WHITHER?

IN THE FINAL chapter of our thesis, we shall indulge the pursuit of a ponderable Supreme or — if you prefer — of a philosopher's God. Even in that task, the most elevated and at a time the most difficult of all scholarly endeavors, we can do no more than apply to that which is with relative certainty known the First Law of Scholarly Ethics, allowing fearlessly such a procedure to guide us out of the realm of the observable into the world of reflective speculation. In their attempts respectively to portray the Supreme, Religion and Science are not at cross-purposes; we believe, rather, that the efforts of the two are bound to converge. Thus, the insignia of our banner is not to be: Science *versus* Religion, but, instead, Science *with* Religion.

In the year of 1934, the Macmillan Co. issued a book entitled *The Great Design* with the sub-title *Order and Progress in Nature.* The book was edited by Frances Mason and an introduction to it was written by Sir J. Arthur Thomson. The aim of the book is well expressed in a brief quotation from the preface by its editor. "*The Great Design* attempts to show some of Nature's problems, and how they are working out — and that behind Nature, though we may not understand, we can see evidence of an Infinite Intelligence that holds the worlds in order . . . If Nature's works show evidence of order, then have we hope that there is a Supreme Intelligence behind Nature . . . It matters not whether this Intelligence works from within or outside of Nature, whether it is immanent or transcendent — if the design is there in either case. It matters not if the Designer is one of unlimited power or intelligence, or whether

Creation is perfect or not — when the only question is whether there is any design at all. If we can see design, we can infer the Designer."[1]

The book contains fourteen semi-popular articles written by fourteen different scientists. Each one of the latter writes in his own special field. As to the perfection of style of the essays, they naturally differ considerably, but the appraisal of their style is not our present concern. Among the authors are: one astronomer, three physicists, one geologist, three biologists, two zoologists, one botanist, one chemist, one physiologist, and one authority on Natural History. The author's names, in the order of presentation of their respective essays are: Robert Grant Aitken, James Arnold Crowther, Arthur Stewart Eve, Baily Willis, C. Lloyd Morgan, Ernest William MacBride, C. Stuart Gager, Henry E. Armstrong, Maynard M. Metcalf, Sir Oliver Lodge, Sir Francis Younghusband, D. F. Fraser-Harris, Hans Driesch, and Sir J. Arthur Thomson. Each one of these fourteen men, over and above being a specialist in some branch of science, is also a philosopher, for, he has applied to the specific content of his own field of inquiry the First Law of Scholarly Ethics, that is to say, has asked the question: what is the implication of my evidence even to the most distant or nth level of discourse? That being the case, they are all concerned with the origin, as well as with the future of things; in other words, they have attempted to comment upon the ultimate question: whence and whither? A few passages from Sir Arthur's *Introduction* and from his essay *The Wonder of Life* is illustrative of the general tenet of thought of all the contributors.

". . . when we pass backwards and backwards until we are confronted with the problem of the Origin of Life, the present-day boundary of our scientific knowledge is reached, in so far as the Biology — the Science of Life — is concerned. If we press further back still and enquire into the beginning of what used to be called Matter and Energy, what can we do but echo St. John's words: 'In the beginning was Mind, and the Mind was with God; and the Mind was God; and without it there was not anything that was made'."[2]

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[1] *The Great Design*, p. 6.

". . . What Science seems to show is that we cannot 'make sense' of the Universe and of our place in it unless we believe in the reality of Purpose — of Divine Design that *has counted* throughout the past and will continue to count in the future."[3]

". . . When we envisage the evolutionary process as a whole, especially the way in which the primeval prepares the lines for the higher steps and makes them possible, we cannot get away from an interpretation in terms of Purpose . . . We approach Goethe's great thought: the whole purpose of the world seems to be to provide a physical basis for the growth of Spirit."[4]

No synoptic appraisal of the fourteen contributors' various conceptions of the Great Designer could, of course, claim precision or validity in the scientific sense. Each author, at the end of his respective essay, expresses some general opinions about the nature and the properties of the Great Designer; a number of nouns are then used to denote the latter. All the essays taken together, there appear about thirty nouns of that kind. These can be boiled down to twelve; the reduction results from the elimination of repetitions and from the coordination of synonymous or approximately synonymous nouns. The revised list of nouns used to denote the Great Designer thus becomes: Mind, Spirit, God, Life, *Intelligence,* Creator, *Power, Person,* Nature, *Will,* Consciousness, Universe as a whole. Four of these nouns have been italicized the reason being that I have selected them for further analysis.

In appraising any terms used to denote the Great Designer, I wish, from the exordium, to confess that I consider any anthropic interpretation of the Supreme a degradation, even an abuse of its very concept. This would mean that we shall have to think of the Supreme — if, at all,— in the most abstract terms possible. It is evident that we human beings — even in the highest flight of mathematical cognition — cannot think the nudity of abstraction bare; all that we can hope to achieve is an approximation. What, necessarily, we have to debar from our concept of the Supreme is the crudely anthropic — otherwise, irreparably, we shall commit the sin of creating a primitive God in our own image.

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[2] *The Great Design,* p. 13.

[3] *Ibid.,* p. 15.

[4] *Ibid.,* pp. 322-323.

A comprehensive disclosure of all the implications of the twelve quoted nouns would be a very extensive task; since we have no precise evidence from any one of the respective authors what he, personally, means by the terms he employs, it might be also a futile task. The sifting out of a few terms, discarding others would seem an economic — and so pragmatic — necessity. In omitting form analysis eight of the twelve nouns, leaving only four, I am well aware that my choice might be criticized; nevertheless, I have selected the favoured four because, in a peculiar manner — either by a positive or by a negative innuendo — they seem pregnant with such a portrayal of the Great Designer as I feel coerced to endorse. These are: *Intelligence, Power, Will,* and *Person.* It need hardly be said that, whenever used to characterize the Great Designer, these nouns are qualified by the adjectives *supreme* or *omnipotent:* supreme, omnipotent) Intelligence, supreme (omni-potent) Power, supreme (omni-potent) Will, and supreme (omni-potent) Person. A few general reflections might aid the analysis of the implications of the four nouns.

What, in general terms, are the directives by which we might cognitively de-anthropize the Supreme? Human abstract or conceptual thinking reaches far — indeed, very far beyond the scope of that which is empirically given; nevertheless, human thought has its limitation, boundaries which it cannot penetrate.

Despite that limitation, though it might seem a contradiction in terms, we are able of thinking — it is true, in an abstract and vague manner only — *the unlimited.* Thus, we can cognize an infinity of magnitude (cf. mathematical thinking), an infinity of complexity, and an infinity of dignity or worthiness (cf. ethics, and its concept of absolute values). Related, no doubt, to that ability is the one of thinking the superlative of all attributes which we associate with things or events, those attributes which in civilized languages we denote by an uncountable variety of adjectives; the superlative possession of these by any one thing or event we indicate by the prefix *omni-,* attached to the adjective concerned. It would seem evident that the affixation of the omni-character to any one being or existent would tend to de-anthropize the latter and, thus, to orient it as a reflexion of the Supreme.

Inherent in the very idea of the Supreme — aside from its omni-character — would seem to be some more concrete and perhaps intellectually tangible implications.

In case, in any sense whatsoever, we regard the Supreme reflected in the Universe such as, in a limited measure, we know the latter, the Supreme becomes the dynamic agency in an event that, in its unfolding, is either a gigantic act of progressive becoming, or, a gigantic act of regressive decay. Thus, no matter whither, the Supreme would be something revealing itself in an all-embracing universal event.

However, any conception of the Supreme as the active agent in universal regression or decay — or even as an agent indifferent to universal decay — would be in conflict with each and every code of human ethics and faith; philosophically, the latter notion would smack of that sophisticated 18th-century deism which conceived of God as, once having created the universe and set it into motion, remaining no longer its ever replenishing *elan vital.* The former supposition, namely, that the Supreme is the *active* agency in universal decay, would force us to regard the Supreme a metaphysical *evil;* ontologically a metaphysical evil, as I shall attempt to show, has a rather weak stand in the great order of nature. Qua men, intuitively we reject a cosmology in which the evil plays the role of the Supreme. Though, by no means, this our attitude is rational, it seems coerced: a non-reflected faith or conviction. Remains, then, the conception of the Supreme as the ultimate determinant, not of universal regress, but of never receding universal progress.

Thus far, in the most general terms possible, our reflections have been focussed upon the dynamic-energetic property of the Supreme. The Supreme can hardly be conceived as having a beginning or origin — no less can it be conceived as a *fait accompli.* Any notion of the birth or origin of the Supreme would inevitably beg the question for a Super-supreme, prior to it and its senior in the order of existence — a harrowing contradiction in terms — whereas any conception of the Supreme as a completed state or an end-state begs the question: end-state *of what* and *for what?* Furthermore, the idea of completion as applied to the Supreme (the absolute) implies the one of ultimate inertness — a notion not afar from the one of final annihilation — the very opposite of illimitable progressive becoming. It would seem, then, that the Supreme has to be thought of as timeless, or as temporally neutral, or as temporally eternal, whatever term one would prefer. A precise difference in the innuendo of these three expressions is hardly discernible. Within the realm of spatial extension, they have their close analogies: the concepts respectively of the non-extended, the spatially neutral, and the spatially infinite. Whoever can apprehend a difference between that which is nowhere and that which is everywhere — who can give "to airy nothing a local habitation and a name,"[5] — he will disaffirm these predicates. Pregnant with that being, the Supreme, which is coevally negative as well as positive infinity, is everything that is finite or limited: ponderable time and ponderable space, alike; the stage for ponderable event. The emergence of the finite or concretely limited, the ordered, is the first act in the drama of creation. The Supreme, being in essence timeless and non-spatial, creates time and extension and remains henceforth immanent in them.

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[5] William Shakespeare, *A Midsummer-Night's Dream,* Act V, Sc. 1, p. 214, 1., 16-17.

In these our reflections is inherent the co-ordination of orderliness with measurability and thus also with finiteness. Offhand, that might seem to conflict with our earlier confessed conception of the physical continuum as infinite. In outlining the diagram of man's place in Nature, we have denoted the physical world in which — by virtue of its bodily property man has his abode — as an *infinite physical continuum.* The incommensurability of such a conception with the one of the ordered physical world being necessarily finite is only opportune — not basically grave. In Parts I-IV of our treatise, our argumentations proceeded on a plane of thinking that was by far closer to layman common sense than to philosophical sophistication. To common sense, spatial extension is three-dimensional — never otherwise. "Sensual space," writes Sherrington, "is always just '3-dimensional' space, Euclidean space; Euclidean space is 3-dimensional perhaps because just sensual."[6] Strange as it might seem, common sense, contemplating in the widest sense Euclidean spatial extension, conceives it more easily as infinite than as finite. We have argued earlier (p. 179) that our comprehension of the spatially infinite is yielded in the cognitive act of "apperceptive synthesis." So powerful is the synoptic urge of our cognition that, even when it coerces us to think the infinite, the limitless, and the unbounded — sensually, the non-synthesizable — intuitively we affirm it with less mental reservation than we would affirm of the spatial *omni* a bounded or limited extension. Since, on the other hand, metaphysical meditation logically compels us to conceive an ordered physical world as measurable and so as finite, we might, in reviewing our diagram of man's place in Nature, think of its right-hand part as being enclosed by two arms which are not the arms of a hyperbola (the proper symbol of infinity) but, rather, by two arms which far but measurably away rightwards will meet and, then, constitute the contour of a gigantic ellipse (the proper symbol of limitation or finiteness). In this connection, we do not feel obliged — nor do we, indeed, feel competent — to bring to the witness' stand, Einstein's conception of a finite Universe. Do our reflections upon the physical world have their analogous application to the mental continuum, that is to say, are we logically compelled to regard the superlative value the crown of a finite value-hierarchy? The answer to that question is too difficult to be within our reach. My intuitive surmise negates the supposition.

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[6] Charles Scott Sherrington, *Man on his Nature,* p. 326.

The Supreme, having originated at no time from nowhere and from nothing, must be entirely *auto-dependent;* being the generator and guide of an ever-progressing, never-receding, universal event, it must be also *allo-sovereign.* Auto-dependency and allo-sovereignity would seem to be two of its irrefutable attributes. Inherent in these — by logical necessity — is the supposition of the Supreme being, *in one,* aim, means, and primordial cause.

On the Supreme, as aim, a commentary is required. The Supreme must be ever-evolving; that attribute, only, eliminates the possibility of the progressive universal event, which it generates and guides, ever attaining finality or conclusive goal-achievement. Thus, it is the very attribute of the Supreme which rules out its ever becoming a fait accompli: the equivalent of inertness or death. A reflection upon ageing adulthood as observed in the life course of Man will bring into relief the last mentioned criterion of the Supreme. Reference to this matter has been earlier submitted (cf. Ch. VI, p. 185).

Whoever — Son of Man — reaches fully the very crown of his highest life-ambition is psychologically dead. Be it that, as he approaches his master-aim, the latter does not evolve into something higher, something more distant — though more desirable — he ceases to exist as a living striving being. The master-goal, at the very threshold of fulfillment, must always forge ahead of its pursuer. Otherwise the latter is inescapably doomed to conative inertness. We humans are subject to that fate—a cardinal sign of our limitation and imperfection. Elderly men frequently cease to strive with regard to the future, indulging instead the contemplation of the past; biologically they might live on for a long time — psychologically they are no more. They are obsolete for progress while they still vegetate in our midst.

A commentary on the Supreme as its own inherent means. If the Universe in progress is the revelation of the Supreme and if the latter is its own inherent means, then, all the agencies of the known world that appear to us as causes become reduced to delegated means of the Supreme. I see no contradiction between the two concepts, on the one hand, that the Supreme is the primordial, auto-dependent means, and, on the other hand, that finite, things, beings, and events, are delegated means of the absolute. From the human standpoint, the latter predicate is one of philosophical optimism. For, it gives to Life and especially to Man, the role in the universal drama of, at least temporarily, indispensable actors. The dignity of that role — even if, as obsolete, Life and Man should once exit from the amphitheatre of the All — remains ever theirs. As delegated means of the Supreme we have played our part in the great imponderable rendition of progress. Our task fulfilled, be it that it has contributed but an infinitesimal theme in a gigantic symphony, has been a dignified and worthy task.

No commentary is required upon the Supreme as the primordial cause — the generator and guide — of the progressive universal event.

From these more or less logically coerced reflections, we may return to appraise the verdicts on the Supreme submitted by a selected number of the contributors to that noteworthy volume, *The Great Design.* Several, more especially three, of these, have identified the Designer with *Intelligence.* Intelligence — though perhaps not in its origin, at least in its present status as a concept — would seem to be a psychological concept.

Let us examine how one of our foremost contemporary psychologists, the late Professor Charles Spearman, regards Intelligence. On the sheerly descriptive side, intelligence is conceived as a *general ability* — the famous *G. G* is definitely a cognitive ability; it expresses itself in three intelligent (cognitive) acts: (1) the act of knowing one's experience, (2) the act of apprehending relations, and (3) the act of educating correlates.[7] This, no doubt, constitutes an ingenuous generalisation; some objection might possibly be raised against the first of these acts as it seems to imply a distinction between experiencing and the knowing of experience. But Spearman, a scholar of far-reaching vision, has speculated upon the deeper nature of general intelligence or *G; G* is to him an amount of psycho-physical energy which remains in the same individual relatively constant while it varies greatly from individual to individual. Theoretically conceived, then, *G* is some agency which has only one dimension of variation, notably, quantity. Considering *G* as it is expanded in the three cognitive acts, its function, then, would seem to be instrumental. It does not, in itself, imply a goal, the said acts seeming to be the servants in the pursuit of some goal not set by themselves.

Spearman's psychology is unique and so is his interpretation of intelligence. A very large number of psychologists have abstained from interpretation and have been satisfied with the entirely meaningless and circular definition: intelligence is that which is measured with intelligence tests. A few, less myopic than the rest, have pondered the problem further. To McDougall, intelligence would be the ability of modifying goal-seeking conduct to befit novel circumstances.[8] To me, intelligence — at least adult human intelligence is inseparable from the integrated system of one's beliefs (one's intellect), those beliefs which — contrary to McDougall — I conceive as energetic units of the person, and as guiding forces (vectors) in the pursuit of goals through labyrinths of highly complex conduct-forms.[9] From the viewpoints of Spearman, McDougall, and myself, intelligence would seem, offhand, instrumental, that is to say, intelligent action would not be a goal *per se;* for, it would be neither aim nor ambition, nor ideal.

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[7] Charles Spearman, *The Nature of Intelligence and the Principles of Cognition.* London: Macmillan, 1927, and *The Abilities of Man,* New York: Macmillan, 1927.

Such a verdict, however, may not be unequivocally valid. Assuming — as would seem fair — that intelligent acts are essentially of the nature of cognitive acts, that is to say, of acts of relating to one another items of experience, then, we would have to take into account certain intelligent acts which are — or at least seem — autotelic or ends in themselves. Aesthetic thinking as well as purely logical-mathematical thinking consist largely in acts of relating psychological objects of a more or less abstract tenor to one another and to the universe at large; certainly, they are neither acts of relating things directly to the self as goals, nor are they acts of relating things — as obstacles to or as means of goal-attainment — indirectly to the self or to any selfish wish. The character of the aesthetic-mathematical act, then, would necessarily become one of autotelic activity, activity which is, at a time, its own goal and its own satisfaction. Spearman's two expansions of the energies of the *G,* on the one hand, into the act of apprehending relations and, on the other hand, into the act of educing correlates would both be involved in these aesthetic-logical acts which, from the viewpoint of any human practical purpose, are useless and devoid of biological survival-value: autotelic in their own right and by their own inherent dignity.

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[8] William McDougall, *The Energies of Men,* Ch. V.

[9] Helge Lundholm, *Conation and our Conscious Life,* Ch. VIII.

In the light of these considerations, it might perhaps be justified — at least in a partial sense — to identify the Great Designer with omni-Intelligence, but, ever and only, with that *esprit* which manifests itself in autotelic mentation and action. According to the psychology advanced in the pages of the present volume, such an intellectual act (as viewed from the human standpoint), would be urged by general curiosity functioning in entire or nearly entire independence of special conation. Intelligence, conceived as sheerly instrumental, could never be elevated to the position of a homologue of the Supreme. The repudiation of any such predicate would be the self-evident corollary of the criterion of the Supreme of being, *in one,* aim, means, and primordial cause.

A few of the contributors to *The Great Design* identify the Designer with *Power,* on the one hand, and with *Will,* on the other. These authors fall short of significance essentially because neither unqualified Power nor unqualified Will imply, in themselves, direction or aim. Power and Will, however envisaged, can be no more than the auxiliaries in the realization of some directed purpose which is not, *per se,* inherent in them.

One, only, of the contributors to *The Great Design,* Mr. Maynard M. Metcalf, has explicitly identified the Designer with *Person;* a similar idea, of course, is implicit in many pronouncements by the other collaborating authors: in the conjectures, especially, which coadunate the Great Designer and *God.* Offhand, it might seem that the portrayal of the Supreme as a *Person* would typify the most anthropic conception possible. On second thought, however, the idea appears directively quite pregnant. Although it is true, that — in the philosophy of William Stern — the *Person* is a metaphysical concept regarded, I believe, as of the order even of sovereign Substance,[10] in a narrower sense, Person connotes a psychological concept; as such it approaches synonimity with the concept of the psychological self or of psychological selfhood.

It would seem that — from the human, or perhaps better, from the psychological standpoint — the most apposite definition of the Person would read: *a being, intrinsically valuable, capable of pursuing great goals through explicitly ego-resolved and ego-guided effective conduct;* such a definition unequivocally implies that a part of the Person is a rich and well-integrated system of beliefs (intellect). I do not know how many of my colleagues would agree with this brief characterization of the human person; one, however, whose verdict should weigh heavier than the verdict of the rest, notably my late friend, William Stern, would, no doubt, have confirmed it. Stern, himself, stresses the point which is here most pertinently at issue: the intrinsic value of the person. I am referring here, not so much to William Stern, the philosopher and author of *Person und Sache,* as to Stern, the psychologist, whose major work on human psychology appeared only shortly before his untimely and deplorable sudden death in the spring of 1938. The general tenor in his exposition of the psychological science would seem explicitly or implicitly to support the definition of the person which I have suggested above.[11]

Focussing upon value as the most vital attribute of the person, even then, the coadunation of the Supreme and the Person might provoke the same objection as I raised myself against the identification of the Supreme with Power, on the one hand, and with Will, on the other. Unqualified Power in realization is undirected; unqualified Will in realization is undirected; *unqualified value in realization is undirected.* Against the last of these terms (the italicized one), however, might be registered serious objections. For, unqualified value in realization has — as sheer value — at least one oriented innuendo or implication of direction, notably, it implies *progress.* That, to me, is sufficient to give provisional preference to the predicate that the Supreme or the philosopher's God is a *supreme value tending toward realization in a progressive universal event.* As such, being a Person, the Supreme is, at a time, goal (progress), means (intellect) and primary cause (Will or Power).

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[10] William Stern, *Person und Sache,* Leipzig: Barth, 1906.

[11] William Stern, *General Psychology from the Personalistic Standpoint,* New York: Macmillan, 1938.

All means or auxiliaries, aiding adaptive goal-seeking activity are, in a sense, instrumental values. That would be true of nature's own ready-made means as well as of the auxiliaries created by man. Our intellect would be an instrumental value, and so would be many of our potentialities for overt action. They would all fall into the group of instrumental goods — means to an end. The only possible description of the Great Designer — or the Supreme — would have to be in the terms of a value that is absolute in the sense that it serves no other purpose than one inherent in its own essential being.

From the Ancients have come down to us the notion of three values more fundamental than any others: the Good, the True, and the Beautiful. Of these, evidently, the Good and the True have their projection onto the pragmatic plane or level. The Good, thus projected, becomes essentially the equivalent of altruism furthering harmonious group-life. The True — as scientific truth — becomes the means of all invention furthering that control of nature which was not given to man in biological evolution (cf. Chap. X). What about Beauty? Has it — like Goodness and like Truth — a projection onto a pragmatic level? I, for one, would entirely disaffirm such a proposal. Beauty — real Beauty — ever and always remains useless; it serves no adaptive purpose — has no representation within the realm of practical utilities. While human altruism is no abuse of the idea of the Good, and while scientific truth is no abuse of the concept of Truth, the application of art and Beauty to the service of utilitarian purposes is a violation of its most sacred nature.

The difference between the alleged absolute values in respect of having a projection unto a pragmatic level begs the question: is not, then, Beauty a more fundamental or absolute value than the other two? In turn, that query may lead to an even more distant one, namely: is there perhaps — underlying Goodness and Truth as well as Beauty — some value still more fundamental than anyone of these (an *Omega-value,* in case we consider the successive letters of the Greek alphabet to denote values increasingly remote from practical application and thus, also, from human comprehension)? No final reply to any one of the two questions is presently to be found; let us, however, tentatively affirm the second one. What would that mean? It would mean the recognition or at least the surmising of one single supreme value expressing itself alike in the quasi-absolute as well as in the pragmatic or instrumental values. With that supreme value, we propose to identify the Great Designer or the Supreme. In surmising the possibility of the *Omega-value,* we are heeding the lesson of human scientific progress. In its course have been successively revealed directive powers of Nature, hitherto undreamed of, that is to say, behind the appearances have been gradually encountered agencies of increasingly sovereign significance.

Bluntly, re-stated, then, we favor the predicate that the Great Designer be conceived as a supreme value tending toward realization in a progressive universal event — the supreme value to be visioned in the terms neither of the Good or the True, nor in the terms of the Beautiful but, rather, in terms pointing beyond these. The Attribute *progressive* applied to the universal event is not meant to denote merely a progression in time but, rather, an actual ascent in the manner in which — within the limits of human comprehension — we think of psychological sublimation (cf. Ch. VI).

It is time to re-consider a diagram earlier designed for the purpose of indicating man's place in nature (Fig. 30). It has been used frequently in order to portray the mutual interaction between the finite mind and its material environment. It shall be used here to clarify the relation of the finite individual mind to the Supreme; thus, it shall also tentatively decree the place of the Supreme in the universal order. Since the latter is its most pressing present mandate, the diagram has to be reproduced with emphasis placed on its left half, the part that symbolized the mental continuum (cf. Fig. 10, Ch. VII).

The basic diagram consists of a circle and of the two arms of a hyperbola. The latter meet in a mathematical point which coincides with the center of the circle. The circle stands for any one living human being, any individual of the species *homo*. The right arm of the hyperbola is meant to represent the enclosure of the physical world. Examining the diagram, we notice that the major part of the right half of the circle — if vertically divided — falls within the physical continuum. This is intended to express that, in virtue of his bodily property — his possession of a body-tool — any one human being belongs to the world of the energy-systems or the material world. The left arm of the hyperbola stands for the mental continuum; evidently that continuum is not spatial but, rather axiological. We should conceive of it as an infinite hierarchy of increasingly dignified or sublimated values. Examining the diagram, we notice that the major part of the left half of the circle falls within the left arm of the hyperbola. This is meant to symbolize that, by virtue of its property of being a finite mind or self, that is to say, by virtue of its mental property, each human being belongs to that value-hierarchy as which we have identified the mental continuum. We have observed that the human mind — its character — constitutes a hierarchy of sentiments under the dominance of an ideal; also that individual human character is isomorph with an individual scale of values (cf. Ch. VI, p. 183). This state of affairs, in the terms of our diagram, can be symbolized by drawing, within the mental part of the circle, parts of circle-peripheries which are all concentric with its outer contour. The ideal, or the highest individual value, then, would become represented by the broadest layer of the section standing for the individual mind, while the lower values corresponding to the instinctive goals, would become represented by the layer that is closest to the point in which, mathematically, the two arms of the hyperbola touch one another.

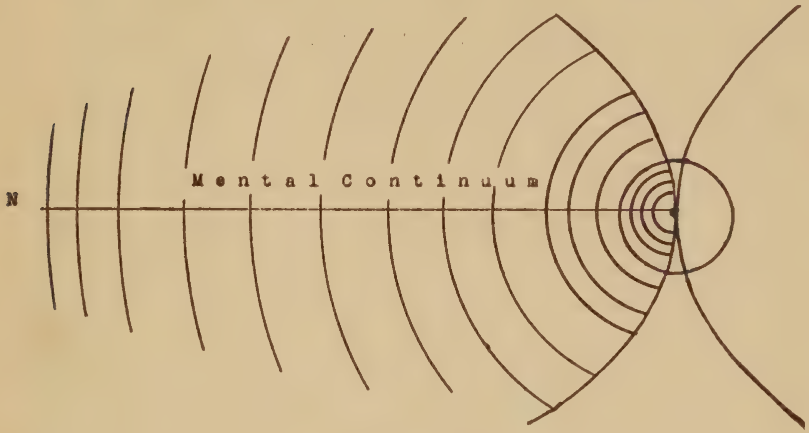

Fig. 30

It should now be heeded that we might pass beyond the border of the individual mind and draw concentric circle-sections throughout the mental continuum; thus, we would have symbols of the extra-individual as well as of the intra-individual parts of a value-hierarchy. Each and every denoted section of that super-hierarchy would be directly continuous with its vicinal neighbor, and so, indirectly, with all the rest. Whereas, far out in the vastness of the physical continuum we would then have our warming sun, at the most distant thinkable level, or the n^th^

level, of the mental continuum we would have that *Omega-value* with which we have identified the Great Designer or the Supreme. Between the individual value of the human self or person and the value of the Supreme, there would lodge a gradient or scale of increasingly dignified values each one respectively — like in the hierarchy of the individual sentiments — being the superior chieftain of all values lower in the hierarchy. The parallel, within the infinite value-hierachy, of the ideal of the individual finite mind would be the supreme or n^{th} value: the *Omega-value.*

When we think of the supreme value as an agency tending toward realization or revelation in a progressive universal event, do we necessarily have to conceive that value in the terms of self-hood? Though we envisage it as essentially pertaining to mind, does that imply, also, that we view it as a self? I fear, though the admission might be considered an intellectual regression, that it does.

Perhaps, in the abstract, we might think of a value that is completely de-personalized or void of self-hood. Such a value, however, would be equivalent with inert value — a notion as near to a contradiction in terms as a notion could ever become. Value if value at all, would seem to tend toward realization. And, such is the limitation of human comprehension that, whenever value becomes conceived as action or, better, as conation, it is bound to attain the property of self-hood. Thus, when we conceive of the Supreme as a value tending toward realization in a progressive universal event, as a value which, in that pursuit, is at a time aim, means, and primordial cause, we inevitably invest the Supreme with self-hood. That self-hood, in turn, is irrefutably an anthropic conception of the Supreme dictated by the inescapable limitation of human thought, the limitation which consists in interpreting ultimately all things or actions in the terms of man's own image. But, need such an interpretation necessarily be condemned as crude or primitive anthropism?

Here, we venture to reply in the negative. Is it not possible to conceive each one of the ascending levels in the value hierarchy of the mental continuum as a being, or self, increasingly distant from or recondite as compared with that finite, embodied, individual human mind which, according to Sir Charles Sherrington, is always central within its own extended and projected body-tool and also within its own psychological time-continuum? The mental hierarchy could then be portrayed as an ascending spiral, whose various orbits always remain oriented with regard to a common vertical axis (the symbol of self-hood) but, whose course, nevertheless,— in each consecutive cross-section of its progress — though never losing its orientation toward the axis of self-hood, becomes notwithstanding, ever increasingly distant from the primitive self-hood symbolized by the lower end-point of that axis. My homologue, of course, is but a means of conveying an abstract idea. But, does not the notion it is intended to stand for constitute the very gist of the idea of hierarchy or of hierarchical arrangement? Any item in any hierarchical structure would seem by necessity to require some common constant of reference; but for the latter a hierarchy would disintegrate into chaos. We suggest that self-hood is that common constant of all the units in the mental hierarchy. In an infinite mathematical series, then, the Supreme, though apprehended as self-hood, would so diverge from the human person to become properly the philosopher's God. The Supreme would be the primary cause of its own revelation in universal progress and, at the same time, the intricate means of the latter; its pursuit however would be but barely expressable in human terms.

Referring to an earlier suggestion, the Supreme, dominating the subordinate units in the value-hierarchy of the mind, makes these latter delegated instruments in the realization of its own aim. This in turn, makes those known values which we call our finite minds instrumental in the great drama toward the enfoldment of which the Supreme, by its inherent energetic or dynamic property, tends.

Incidentally, it should be heeded that, if we assume conscious guidance of conduct on all levels of life, including perhaps plant-life, this means that we endorse the reality of an embodied animal — even plant-mind. I have committed myself to the affirmation of such a supposition. To those who follow me, it should be clear that the diagram indicating man's place in nature — portraying, on the one hand, his interaction with the physical world and, on the other hand, his servitude to the Supreme, would then attain a broader significance; for it would be applicable to any one living being. The circle of the diagram would stand, as well as for a man, as for a plant or for an amoeba or for a chimpanzee. That being so, all living beings would be knighted with the dignity of delegated servitude in the universal event, tended toward or intended by the Supreme.

So far, we have seen that the great question of the *Whence?* ultimately loses itself in the dusk of the unknown and, that so does ultimately the question of the Whither? Between these two regions of dimness, however, lies a drama of salient events, salient to the philosopher's inspection. Somewhere within that explicitly structured domain belongs the psychological self: our comprehension of the latter and of its place in a cognitively accessible universe. Inference from that salient region might perhaps be hoped some time to penetrate the mist of the *Whence;* it projects already luminous arrows into the hinterlands of the *Whither.*

Have we any specific grounds on which we may infer the direction of that great universal event which we have considered the revelation of the Supreme? Though we can define precisely, neither the Supreme — or Omega-value — nor the point toward which all its energetic tendencies converge, I think, we have. In order to infer that direction, we have to examine all that we possibly know and intuit concerning ourselves and concerning the world. We also have to delineate, boldly, long-section generalizations of trends that we surmise in the evolution of the known. What such generalizations might be pertinent to the direction of things to come and so, indirectly, to the nature of the Supreme?

In case, like most scientists proper, we restrict our search for long-section generalizations entirely within the domain of physics and chemistry, we might arrive at the rather discouraging picture of a universe tending toward a state of entropy or dynamic inertness. If, on the other hand — with most of the contributors to *The Great Design* — we recognize the necessity of the cosmic universe once having been created — that universe which is sufficiently structured to be, within limits, measurable in the terms of time and space — then, perhaps, we might also indistinctly conceive the possibility of a continual progressive re-creation; the latter need not be effected by Maxwell's demon (cf. Ch. III, p. 74), but, rather, by the supreme value and intellect with which we have identified the energetic Supreme. In visioning such a re-creation, we transcend beyond the sciences proper — perhaps, we dream.

In seeking a homologue of the idea of Creation-Recreation, we may, perhaps, call upon mathematics. Mathematics is probably the most cosmic of all the sciences, cosmic in the sense of being orderly, rational, and intrinsically consistent. Suppose, then, that by some incalculable miracle, became completely obliterated from all mathematical thought the very concept of *seven-hood.* This would mean, of course, that that concept would have no mathematical symbol whatsoever. The simple digit *seven* (7) would vanish as a spatial and as an auditive symbol of seven-hood; the symbolization of seven-hood by the formula: *four plus three* (4+3) would also be impossible, because the very concept of seven-hood has become unthinkable. Whenever, from the viewpoint of the "pre-miracle" mathematics, the concept of seven-hood would be encountered, the mathematician would suffer some kind of professional "petit mal," become temporarily unconscious. This, no doubt, would adjudge the "post-miracle" state of affairs a regression to complete or nearly complete chaos. Would it not be possible, however, that human ingenuity might re-create out of the "post-miracle" chaos a new cosmic mathematics, one in which the concept of seven-hood had no abode? I submit that I can vaguely surmise such a re-creation of a radically novel mathematics. It is possible, by hypnotic suggestion to make a person—in a post-hypnotic condition with complete amnesia for the suggestion—unable to think a certain simple number like the number seven (7). When in the post-hypnotic state you confront your subject with the task of adding, let us say, two three-digit numbers, the following happens. In case the digit (7) occurs in one of the numbers, he cannot think it; in case the number seven would result from the addition of any one of the two numbers in the vertical columns, he cannot think it. What does he do? Unquestionably he shows some confusion, but very soon he becomes able to solve his dilemma by some random error. If an individual human being, under the conditions described, is able to evade, by random errors of which he is not aware, the difficulties arising from the subjective disappearance of seven-hood, would it not be possible that many generations of cooperating mathematically-minded people might evade the miraculous disappearance of seven-hood by some consistent error which, by its very consistency and through universal consent would allow a new cosmic mathematics to develop. In case my reflective search for a homologue of re-creation of chaos into cosmos would seem to the mathematician completely irrelevant, I humbly beg him to forgive and to forget.

Let us now consider another long-section generalization, this time one educed from the examination of the story of Life. It falls into two parts: generalizations from animal and generalizations from human life. Biologists have adhered to the doctrine that life evolves from simpler into more complex forms. They have regarded biological evolution an ascending progressive event, its present climax having been reached in biological man. This broad viewpoint is little harassed by the realization that, in the course of ascending evolution, we find regressive forks that take off from the main route and lead either to a dead end or to a regression into the abyss of lower, though still surviving, forms. Cultural anthropologists, having studied man essentially from the aspect of euthenics, have viewed cultural evolution, also, as an ascending event departing from primitive man and ending in civilized man.

By examining the chronicle of cultural evolution, we can extract several long-section trends. We can, for instance, observe and follow the ascending creation of the extrinsic tool-series — from the lever and the wheel to the complex self-regulating power-station. This development seems to be one in which, with increasing efficiency, man substitutes his own muscular exertions by power directly derived from inanimate nature, applying that power to auxiliaries of adaptation. In the course of development of the tool-series we also observe how man — by ingenious invention — has been able to compensate for biological shortcomings reaching a state of perfection by which he can move on the surface of the earth, under the great waters, and in the high air, with an efficiency surpassing any infrahuman living being (cf. Ch. X, pp. 311-20).

Observing the tool-series, however, we are compelled to admit that its manifestation as a creation extrinsic to living organisms implies no absolute break or unbridged gap between biological and cultural evolution. Many animals, prompted by simple instinctive needs, create — for the sake of their biological survival — auxiliaries outside their own organisms (cf. Ch. X, pp. 316-19). Conceding that, however, we cannot fail to acknowledge that, compared with the animals', man's ingenuity in creating outside auxiliaries is like an infinitesimal number to the number one (1). The ascent of the tool-series, as reflected in cultural evolution, reveals the increasing control achieved by the human mind over the forces of inanimate nature. Why might we not denote that increasing control as an increasing *psychification* of matter. The term *psychification* is not an endorsed dictionary term. Due to its excellent descriptive property, however, we shall use it henceforth.

At this point, I shall suggest a gigantic generalization which brings into one single dimension biological as well as cultural evolution.

One might regard creativeness the most fundamental of all human attributes. The first chapter of this volume made a reference to the Biblical myth of man's creation by God in His own image. Thereupon, the question was asked: What important message concerning man is contained in that great Biblical myth? The answer offered was: "There may be many, but the most salient one would seem to be that man of God's image shares with his prototype the power of creativeness. The Biblical God, his very essence, was creativeness. That faculty was God's basic gift to man His image . . . Man's greatness and uniqueness, then, would be his creativeness — not in the sense that, like the Biblical God, he creates an organized world out of nothing — but, rather, in the sense that by organizing and reorganizing that which exists he kneads the substances of nature into his servants and, in his highest manifestation of creativeness, into objects of beauty. In that measure does he mirror the God of the myth."[12]

In referring to the Biblical myth of man's creation and to its import, I indicated that I spoke of the myth only symbolically: ". . . In no literal sense do I accredit the Biblical myth of creation; indeed, in due time, I shall propose a theory of creative evolution which makes the ascent of man not independent of a supreme spiritual actuality but, to be sure, independent of any anthropomorphically conceived Deity . . ."[13] Here is the proper time for keeping that promise.

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[12] Cf. Ch. I, p. 14.

Many biologists and psychologists who have adopted the dualistic-interactionistic hypothesis of the psycho-physical problem have also, as a naturally befriended correlate, adhered to the Lamarckian doctrine of evolution. Lamarck's fundamental work, *Zoological Philosophy,* contrary to so many writings by his scientific contemporaries, lacks the charm of good style; the argumentation brought forward seems, many times, naive and poorly expressed. Nevertheless, the work contains a leading idea, notably, the well-known and in many circles ill-reputed one of the transmission of acquired characteristics.[14] In turn, that idea has one very ponderous implication, namely, that mind in evolution creates and continually improves its own auxiliary of expression and action: its body. Logically, then, the advent of life would mark the moment when for the first time non-extended mind applied itself to a tool created by itself out of extended reality or matter; the moment, in other words, when in the very simplest sense mind embodied itself.

This view allows a very far-reaching synthesis. It permits us to conceive a direct continuation of biological into cultural evolution; in so far as each one, respectively, embodies the creation and the perfection of auxiliaries of pragmatic or instrumental value, there is between them no break of continuity — no real gap. The most primitive eye — a mere pigment spot on a speck of protoplasm — falls into series with the most powerful telescope invented by human engineering ingenuity, and the simplest neuro-muscular system effecting useful labor falls into series with the world's largest and most intricate power-station.

I have suggested that, if we are going to divine the course of the progressive universal drama which reveals the Supreme, we have to extract from events which with fair certainty we know long-section generalizations and make our inferences from them. The long-section generalization delineated above would seem to indicate that a trend in the progression of that great universal event is an increasing control of mind over matter. Whether or not this means that the cardinal aim of the universal event is a spiritualization (psychification) of matter would still remain an open question. If it is, it would suggest that the Supreme tends toward ever-augmenting immanence in its own creation: the spatially and temporally extended, within limits measurable world. In such a spiritualized universe, a man on the surface of our earthly globe would differ from a star on the firmament, not because Man has a mind and the Star has not, but, rather, because — as minds — Man and the Star are differently embodied. In turn, that supposition is pregnant of another reflection: The tendency of ever-augmenting control of mind over matter that seems to crystallize from the examination of the domain of life, does not inevitably decree that a complete obliteration from our globe's side of life — including human life — would be equivalent with the cessation of universal progress. However touchy we might be regarding man's significance in the universe, logically, the destruction of life and man, may mean no more than life and man having become obsolete as delegate means in an irresistably unfolding crusade on the part of the Supreme.

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[13] Cf. Ch. I, pp. 13-14.

[14] Jean Baptiste Lamarck, *Zoological Philosophy.* Trans. Hugh Elliot, London: 1914.

Another reflection: increasing control of mind over matter would, seemingly, have to be instrumental of something; what would be that something? A tentative answer to that question can be better delayed until later. Instead, we shall immediately follow another long-section trend evident when we examine biological as well as cultural evolution, notably, the ascent of value-appreciation, more especially, the ascent among us humans of man-to-man benevolence, or mutual altruism.

In his last Gifford lecture, Sir Charles Sherrington calls to attention what he considers the very latest result of evolution, the evolution of the social group.[15] This evolution coincides with the evolution of values, most notably with man's giving birth to altruism. But, the evolution of the human social group has, in a measure, its parallel in the "life in the little." I shall try to portray, in brief, Sir Charles' impressive exposition on this matter. When complex forms of life resulted from the aggregation of cells into cooperating cell-units, these complex configurations seemed to have survival-value beyond the simpler forms. Human society, alike, having evolved, seems to have had at least a temporary survival-value. There is, though, a fundamental difference between the human society and the society of the cell-aggregate. The latter is entirely the product of events within the domain of the energy-scheme; it has a purely physico-chemical basis. Not so with human society; it is integrated, not by energy, but by mind.

In nature as energy-system — including life — there are no values. Essentially, each living being is self-sufficient. Evolution germinates forms of life which, for the sake of individual maintenance, have to prey on and to destroy other forms of life. Nature values no one of these lives higher than the rest. Thus, social man's altruism brings him into conflict with the very nature from which, evolutionarily, he has himself sprung. He becomes, indeed, the critic of his own egotistic "zest to live." Nevertheless, even that has survival-value because upon it rests the cooperating social group.

The competitive struggle between life and life begins on an evolutionary level at which recognizable mind has not as yet become associated with life — as Sherrington would call it, on the level of "subconscious" mind; it continues after recognizable mind has evolved, becoming then saturated with pain.

The evolution of values and the evolution of the social group go hand in hand. Each — in its unfolding — has been and is conditioned by the competitive struggle between life and life.

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[15] Charles Scott Sherrington, *Man on his Nature,* Ch. XII.

Man, the seat of recognizable mind and of values, what is his destiny? Is he here to stay or is he to be scrapped as so much of that which has evolved? If the latter be the case, what has been his worth? What has been his compensation for the human accomplishment, that accomplishment which went so far beyond the realm of the energy-systems? On these questions, we shall quote Sir Charles, himself. ". . . Is man one more experiment which Nature makes, later to scrap it? It may be so. Time has brought man his turn to come and then to go? Or did it mean more? Could it mean that man would stay? Nothing did stay . . . But there is in his instance a new factor, or one at least strangely prominent in it: mind. His oncoming had been an outstripping of other minds. His dominance pillars on mind. Will that ensure its future . . . ?[16]

". . . we are so fashioned that our world, which is our experience and is one world, is a diune world, a world of outlook and inlook, of the experienced perceptible and of the experienced imperceptible . . . it is given us in so far to seize it, and as one coherent harmony. More: it is revealing to us the 'values', as Truth, Charity, Beauty . . . Charity will grow; Truth grows; and even as Truth so Beauty . . . The mind which began by being one thing has truly — as so often in evolution — gone on to being another thing. Even should mind in the cataclysm of Nature be doomed to disappear and man's mind with it, man will have had its compensation: to have glimpsed a coherent world and himself as item in it. To have heard for a moment a harmony wherein he is a note. And to listen to a harmony is to commune with its Composer?"[17]

There is a tragic augury in Sir Charles' verdict on the future but, auspiciously, only in his verdict on the future of life and man. The extinction of these — as has been earlier remarked — need not betoken the petrification of eternally onward forging universal progress. On that inestimably important matter we shall submit some further commentaries shortly.

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[16] Charles Scott Sherrington, *Man on his Nature*, p. 394.

[17] *Ibid.*, p. 401.

Almost as the evolution of the tool-series is contingent upon our mounting appreciation of the true (as scientifically conceived), so is the evolution of altruism dependent on our ascending apprehension of the good; in a manner, this constitutes a genetic parallelism between the two. Viewed as the revelations of supreme values, the former would represent the projection upon a pragmatic plane of the Ancients' absolute 'truth', the latter, the projection onto the same level of what they conceived as absolute 'goodness'. I have argued, nevertheless, that the development of tools does not signify a gap between biological and cultural evolution. Animals create tools (nests, traps of prey, and what not). In case — beyond that consideration — we take the view of biological evolution being essentially the creation by mind of its own body-tools, then, we behold a very far-reaching synthesis: the unification, indeed, into one single gigantic dimension of progress of biological and cultural evolution alike. In a certain measure, what that synthesis decrees is supported by the ascent of altruism. Many animals are altruistic in the primitive sense of possessing a protective instinct prompting them to take care of their own young whenever protection is needed. But, since animal altruism is simple and restricted, it is infinitely afar from man's message to man of universal love, respect, and benevolence.

Truth and Goodness are two of the proverbial absolute values; each one has its respective projection unto a pragmatic plane or level. Beauty, the third of the absolute values, has no such projection. It is entirely autotelic: in no proper sense, instrumental or auxiliary. Beauty, nevertheless, is created by man and beauty is contemplated by man for the sheer sake of contemplation, that is to say, independently of any adaptive necessity. No animal is known to create extrinsic enduring objects for the sheer sake of these being contemplated. No humming bird having created its nest — a nest which to the human eye is greatly attractive — is known to have sat down to contemplate its creation, doing no more about it. Men alone create objects for no other purpose than for contemplation. Beauty, thus, differs form Truth and from Goodness in two important respects. On the one hand, it is pragmatically useless; on the other hand, its creation for the sheer sake of contemplation is a creation achieved exclusively by man. Creation of Beauty, then, actually represents an unbridged gap between animal and human power of accomplishment. This, it would seem, gives to Beauty a dignity over and above the other two absolute values, each one of which has its respective projection onto a pragmatic plane and each one of which has its ancestry in the animal kingdom. The essence of the reflections here submitted can be clarified by the attached simple figure (Fig. 31).

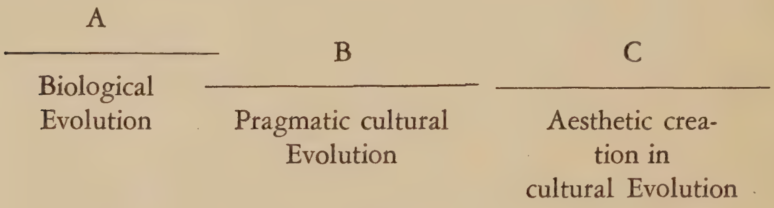
A
B
C
Biological Evolution
Pragmatic cultural Evolution
Aesthetic creation in cultural Evolution

Fig. 31

In this figure, the horizontal line A stands for the progress of biological evolution, the horizontal lines B and C for the progress of cultural evolution. B, especially, represents the pragmatic progress in cultural evolution; C, the aesthetic progress in the same course. A and B partly overlap; this is intended to indicate that animals show already the beginning of what we have called the creation of tools and auxiliaries outside their own organisms. Incidentally, they also manifest — in the simple terms of inarticulate emotional vocal utterances — the use of the greatest of all tools of control: language. Between B and C, on the other hand, there is a gap. That gap is meant to signify that the aesthetic creation of useless objects of beauty is exclusively human; no foreshadowing of it is observable even in the animals who are biologically closest to us.

To sound again a previously sounded tune — this time, however, with a suggestive finale: The evolution of the tool-series as conceived in the gigantic generalization which brings together in one single dimension of progress biological as well as cultural evolution indicated the mounting control of mind over matter. That control could be considered having only pragmatic or instrumental value. May it not be that Beauty in realization having no instrumental value, unlike Truth and Goodness, no projection onto a pragmatic plane and, nevertheless, being created among living beings by man and by man alone, reflects more than the other absolute values an actual trend in the universal event revealing the Supreme? Or, may it not be at least that Beauty approximates the ulterior value (the Omega-value) behind the classical trilogy (Truth, Goodness, Beauty) more closely than the other two values? Beauty, whenever and wherever manifest, is always orderliness; it is also always orderliness within a whole. The Universe, as we humans know it, is orderly wholeness. These questions, like many following ones, can only be raised but not with finality answered; the very fact, however, that they can be raised might be significant.

Is the progressive universal event in which the Supreme reveals itself a creation and recreation of the universe for the sheer sake of contemplation? Assuming that the Supreme, as a value in realization, comes nearer to Beauty in realization than to any one of the Ancients' other two values, that would seem a reasonable supposition. Who, in such a case, would eternally remain the contemplator? Man who — alone among known beings — enjoys a glimpse of universal order, wholeness, and so, Beauty or, if not man, indeed, who? Strange as it might seem, a tentative answer to that question — no reply could be but tentative — forces us, as a necessary preparation, to consider the problem of a "possible Evil."

May we, perhaps, begin with the fairly reasonable presumption that the Evil be an agency which negates the philosophers' three values: the True and the Good as well as the Beautiful. I have conjectured that, in order to divine the ultimate trend of the great universal event in which the Supreme is revealed, we have to consider everything we know of ourselves and of the world around us and try to make salient and suggestive long-section generalizations. Beyond that, we have no power of inquiry.

We might theoretically conceive of the universal event as taking many simultaneous routes all converging asymptotically toward an ever evolving aim. Only one of these would be the one on which life and man are delegate instruments. The special significance of that route would lie essentially in the fact that it is the only one whose course, in the terms of human comprehension has some measure of concrete meaning; its irrevocable message would be that in the pursuits of the Supreme is involved an ever waxing control of mind over matter. That trend can be read off from the very creation of life, that is to say, from the first most simple embodiment of mind; it can be gradually followed through innumerable intermediate stages to the personalization of mind such as we find it manifested in the immediately experienced self-hood of the human being. If that particular route of realization of the Supreme stages the embodiment of mind and the personalization of mind into definitely felt unities of self-hood, what would logically preclude the possibility that, along other routes of progress, there might appear — perhaps must appear — other modes of embodiment of the Supreme into other forms of delegated subordinate self-hood. The human self is not the only comprehensible self-hood;

if it were, how could we conceive the temporally and spatially neutral Supreme as self-hood. Various conjunctions of mind with matter are at least thinkable, conjunctions pregnant of a control of mind over matter far beyond and superior to the one evinced in the biological-cultural evolution of man; assuming that complete spiritualization or psychification of matter should be the aim of the great progressive design, such conjunctions would be nearly inevitable.

The possibility of the many routes of progress of the great universal event granted, we might conceive without difficulty of some one or the other of these routes becoming, for some reason or the other, obsolete. As such, they would constitute an interfering inertia and so an obstacle to progress. We men — in our limited earthly life — become aware of obstacles. In the psychological section of this volume, the obstacle has been interpreted as a physical event which, in a purely physical sense, interferes with the progress of a reactive event required by adaptation and prompted by some one or the other practical conation. This objective obstacle becomes a subjective obstacle in so far as it evokes general curiosity which, then, comes to cooperate with the special impulse already at work; the former impulse yields the subjective awareness symbol we call the obstacle. Assuming now that some advanced human mind, viz., the mind of the philosopher, surmises the progress of the great universal event, surmises it generally in the terms of a revelation of the True, the Good, and the Beautiful, such an advanced mind, then, might also get a glimpse of obstructions to that progress. These would be yielded by the same "disinterested interest" which theoretically we have assumed to be prompted by general curiosity functioning here upon an elevated level of scrutiny. What those obstructions are may be difficult to establish; in so far, however, as they are even dimly realized, they enter upon the stage of human thought clad in their own symbolic outfit: let us suppose they would be reified as and named *Evils.* Whenever, then, on valid ground, man would consider mankind itself as Evil, that would signify that, in some manner or the other, the line of progress in which life and man are delegated means has become obsolete. Likewise, whenever man considers matter the essence of Evil, it would signal a recognition — true or false — that matter obstructs his participation in the great revelation of the Supreme. This is an interpretation of the Evil which is based upon a broad generalization educed from our limited knowledge of the human psychology of frustration.

The possibility that the line of progress of the universal event through the route of life-man might become obsolete is not excluded. Crucial signs might be that man, in the course of cultural evolution, has invented auxiliaries of severe self-destruction, perhaps, even of the destruction of all life. Should it be true that life is doomed to vanish from our globe as soon as our warming sun has ceased to glow, such a prospect in itself would mean that, from the beginning, the route of progress through life-man had only limited potentialities. Never forget, however, that, while an actor on its earthly stage, life had the power of retarding entropy. That, its power, is admitted by the more thoughtful of our biochemists. But, even be it that life is the sole *known* conjunction of mind and matter, this does not logically imply that the destruction of life be necessarily equivalent whether with the destruction of mind or with the destruction of matter. Thus, there remains a possibility that in the progress of the great universal event of psychification of matter other conjunctions of mind with matter may emerge which, though having not the earmarks of earthbound life, might carry further that trend and accordingly promote the ever mounting control of mind over matter. But, that progress would be by routes which by-pass the obliterate route of life-man. In order to clarify this, again I wish to call to attention the diagram by which I have symbolized man's place in nature; I shall use it here to portray man's exit from nature. This will necessarily usher into our discussion a concept which, heretofore, I have ventured to brandish only with the greatest hesitation and humility, namely, the concept of "recondite substance."

The general significance of the basic diagram (Fig. 32) need not be re-stated. It should be remembered, however, that in most instances when it has been earlier used, the circle has stood for any one living human being, that is to say, for a living being of the genus *homo*. In the present connection, the same circle may as well stand for any one living infra-human being: an animal, even a plant. In the diagram, there appears a number

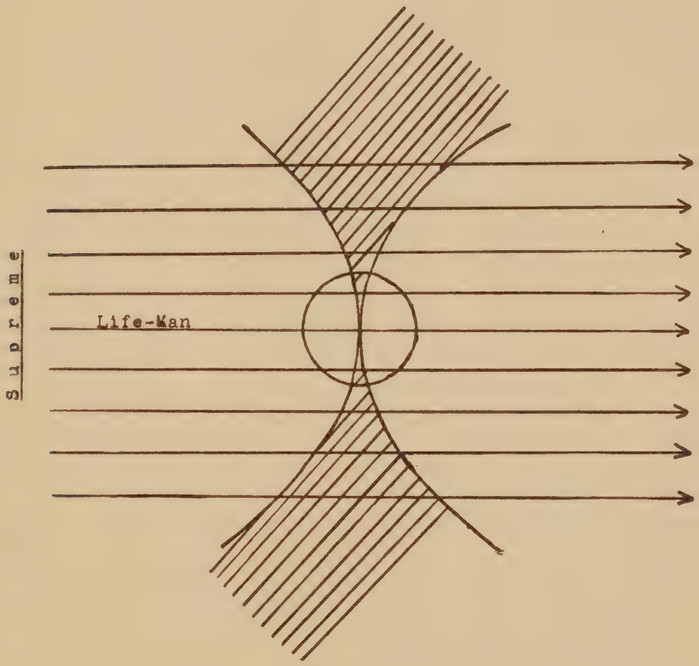

Fig. 32

of horizontal parallel lines, each indicating a direction from left to right, from the Supreme to its ramification. Only one of these horizontals penetrates the point which we have denoted as the mathematical point of interaction between mind and body. That particular line we should here regard the very line symbolizing the progression of the universal event by the delegated means of life-man. The other lines, parallel with the life-man horizontal, indicate other routes of progress in the same universal event. I have suggested that the life-man route may become obsolete and so any one other route of progress in the revelation of the Supreme. Thus, any one horizontal line parallel with the life-man line stands at a time for a possible route of progression and for a route potential of becoming obsolete. The sum total of all routes having become obsolete in the progressive revelation of the Supreme we propose to identify with the evil. We do not affirm, then, any substantial Evil in the metaphysical sense; we do affirm, however, as shall be indicated shortly, that the progressive residue even of obsolete or Evil lines of advance continue to exist as a metaphysical Good. Thus, we do not concede, whether that matter as a reality is an ultimate Evil, nor do we concede that the human mind's embodiment, its biological organism, is ultimately Evil. Evil is only that which, for some reason or the other, becomes obsolete as a delegated means of progress.

Two parts of our basic diagram, the upper and the lower one, have been obliquely striped. These are intended to stand for what we have chosen to call "recondite substance." The horizontal lines indicating the progress of the universal event with one exception — the life-man line — pass through the part of the diagram denoted as recondite substance. What is that intended to signify? First of all, that the progress of the universal event has by far more routes of advance than the one of life-man. Assuming that the latter become obsolete, there remain a countless number of others entirely by-passing it. These proceed through recondite substance but not through the mathematical point of interaction between the individual human or animal mind and its environment; instead, it passes directly through recondite substance. What is recondite substance? Some form of reality in the terms of which the valuable accumulations of obsolete routes of progress are preserved, preserved as inert and yet vitally important stepping-stones in the progressive universal dynamism: petrified subsidiary goods which in frozen statuesque gestures point ever forwards but never backwards. The life-man line, then, assuming it having become obsolete, its valuable accumulation would become stored as recondite substance. The same would be the case with the valuable accumulations of any one other line of progress of the great universal event. Recondite substance would contain all valuable achievements in the course of routes of progress having become obsolete. It would contain what, from the human viewpoint, is the progressive past; it would also contain a glimmer of the direction of the future, that future which cannot be predicted by reasoning. Its inaccessibility to man lies in its substance having been accumulated from so many diverse dimensions of progression presently exhausted but, even while vital, unknown to man. All that which at the time of waning persistence became Evil, has its valuable residue in recondite substance. Recondite substance would retain as enduring reality the valuable past as well as the gross direction of the future. Nothing, then, is ever lost or wasted. Man paid his tribute to the universal symphony even if the individual tune of his composing be a theme that shall never recur.

Is it too much of a challenge to human abstract cognition to suggest that recondite substance as here portrayed be an actual reality, a reality which is spatially neutral but temporally directive? As temporally directive, it has — by way of its reference to the past — a reference to the future. It is not itself energetic but it is a silent indicator of direction. As such, can it be considered substance or perhaps the residue of substance? In our diagram, its nature of being temporal but not spatial is indicated by its intermediate position between mind — the temporally as well as spatially neutral substance — and matter — the temporal as well as spatial substance. That aphonic Id which leaning on the past points to the future; how can we conceive it as a reality? Perhaps a crude homologue from the spatial world will help.

Imagine a highly industrialized country all parts of which unceasingly surge with laborious activity. Imagine the Metropolis of that country: the nodal-point of all its strife. Imagine a large number of train-communications leading from all parts of the country to its focus, the Metropolis. Imagine some of these train-communications becoming obsolete and discontinued for use, perhaps because air-traffic has taken over freight, mail, and passenger transportation. Left of these train-communications are but the naked rails. The latter do no longer vibrate from the impact of on-rushing engines — notwithstanding, they are still there. They point towards the great Metropolis; they are silent directives of the road to Rome. Certainly, they are structured realities; though temporarily no "momentum" submits to their lead and, though perhaps no momentum ever shall, they are nevertheless silent signposts pointing forwards, onwards. In this our treatise, we have continually obeyed the mute gestures of recondite substance; we have attempted to interpret the frozen voices of the past; how otherwise could we ever pretend to surmise the future?

Faith in the reality of recondite substance is essentially faith in the supposition that *value is ever indestructible* — that it perishes not even when its temporary embodiment is reduced to dust. For, it is retained as recondite substance: wisdom of all time achieved in the course of all progressive endeavor. Pointing ever forward, it is *in one* past and future; it is thus temporal though spatially neutral. Inherent in that supposal, is the affirmative answer to two of the most ponderous questions of human civilization: do, or do not, disembodied souls exist and, are they, or are they not immortal?

Whatever is immortal — even though temporarily in a state of quiescence or "sleep," would seem to carry with it the potentiality of active revivification. In so far as the latter requires re-embodiment, our argument would endorse the doctrine of transmigration of souls.

Before we attempt to answer even remoter questions on the *Whither,* questions only dimly within our reach, a summary of our previous inquiry and its results — if results they are — might prove of aid. Such a *resumé* can be formulated in a set of fairly brief predicates to each of which — according to need — is appended a short commentary.

1: The order observed in nature coerces the search for a designer; that designer is the Supreme.

2: Our conception of the Supreme should be debarred of anthropism; the approximation, only, to such a conception is humanly possible.

3: The Supreme is an ultimate dynamic value (the *Omega-value*) tending toward realization in a progressive universal event. In this capacity, the Supreme is, *in one,* aim (purpose), means (intellect), and primordial cause (power).

4: These attributes inevitably invest the Supreme with selfhood.

5: The Supreme is temporally-spatially neutral; it is timeless or eternal — it is non-extended or spatially infinite.

6: As revealed in a progressive universal event, the Supreme is unceasingly creative.

7: The first act in its progressive drama is the creation of the material ordered universe. The latter is temporally-spatially finite and, in a degree, measurable.

8: The temporal-spatial universe, *per se,* is an automaton. But for continual Supreme sustenance, it would tend toward entropy or equilibrium of its most minute parts. Its sustenance constitutes unceasing acts of re-creation. Since the Supreme is dynamic value and since value is ever of the essence of mind, re-creation becomes equivalent with ever spreading psychification of matter.

9: Life, climaxing in Man, is the Supreme's only known venture in the psychification of matter.

10: Other forms of psychification of matter are logically possible. The life-man line, then, might be one route of progress only in the revelation of the Supreme. Countless others might subserve that re-creation which steers the ascending course of the universe.

11: Each one and all of these routes represent delegated means of the Supreme. Any one of them might become obsolete; it then becomes an Evil. Progressive accumulations in the course even of obsolete modes of pioneering are retained as *recondite substance.* Recondite substance, thus, has a backward reference implicit in which is a forward directive.

12: If the tendency toward ever mounting psychification of matter is a trend in the revelation of the Supreme, that trend might be no more than a delegated means to an end that is higher and more remote. What could the latter be?

13: The classical trilogy of ultimate values encompasses: the True, the Good, and the Beautiful. Two of these, the True and the Good have their projections on a pragmatic level, respectively, in science and in altruism. Only the Beautiful is entirely autotelic. For that reason, it is a value of higher dignity than the True and the Good.

14: The Supreme might be a value over and above the values of the classical trinity (Omega-value).

15: Since in that trinity the Beautiful occupies a status of distinction higher than its fellow values, Beauty in realization, more closely than the latter, approximates the Omega-value.

16: This opens a perspective into the future aim, toward which complete psychification of matter serves as delegated means. Whither projects that perspective its radiant but fading beam?

Our remaining dicta in answer to that question might seem but the locutions of a poet's dream: not a dream, however, seeking cosmic expression of a chaotic Freudian Id but, rather, one bridled by law and logic. Its contours emerge from the dusk of the hinterlands as fearlessly we apply to that which with fair certainty we know the First Law of Scholarly Ethics. In case we do not apply to the known that law, that is to say, if we refuse to use the empirically given as a stepping-stone for forging ahead beyond it, we are photographers rather than philosophers. Too many contemporary psychologists have preferred the profession of the former to the art of the latter. In venturing beyond the known, what do we encounter? A vision of exquisite beauty.

The complete psychification of a finite material universe would be identical with the emergence of one single all-embracing selfhood; it would imply complete immanence of the Supreme (the Omega-value) in all that materially is. Being a self, the universe would experience — be aware or conscious — but it would have no environment, no problems of adaptation. Its acts would be merely acts of contemplation of the perfection of its own embodiment, the ordered universe as a whole. It might then also continually modify or recreate its own embodiment for the sheer sake of contemplating its sublime beauty. It could be likened with the Greek Narkissos who adopted various bodily postures for the sheer sake of admiring the beauty that was his own as reflected in the depth of the well.

A few men have reported rare experiences when they seemed submerged in a self-hood that was not their own but, rather, the self-hood of a universal soul: that is the experience called "cosmic consciousness." Do these men intuit the aim of the Supreme?

> I have seen
> A curious child, who dwelt upon a tract
> Of inland ground, applying to his ear
> The convolutions of a smooth-lipped shell;
> To which, in silence hushed, his very soul
> Listened intensely; and his countenance soon
> Brightened with joy; for from within were heard
> Murmurings, whereby the monitor expressed
> Mysterious unions with its native sea.[18]

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[19] William Wordsworth, The Excursion, Book IV, *Poetical Works, VI,* Boston: Little, Brown and Company, 1864, p. 160.

POSTCRIPTUM

THE VERY first paragraph of the first chapter of this work reads: Several years ago, a book was written upon problems of aesthetics. Its author was an amateur in many fields and with the courage of the dilettante he had speculated widely and afar. He had even outlined a metaphysics. It happened that in his metaphysical scheme there was place for a supreme actuality or being — a God, if you will. But that God was abstractly conceived and had not even the dimmest resemblance with the anthropomorphic God taught by the ordained administrant of the Gospel — it was, if ever, a philosopher's God. Its position in the metaphysical system was such as to make it a *logical* possibility — no more — that the intuition of so many creative geniuses of their work being inspired by a power beyond be true. To the author that was but a logical corollary of certain premises; as a reality, he never either affirmed or denied it. It was to him but an item of mentation. A certain commentator on his work wrote to the effect that, since he had accepted Divine inspiration as the mainspring of aesthetic creation, his work deserved no consideration by science. That was the Alpha and Omega of the critic's comment.

Despite this Draconian verdict on a kindred author, in the volume herewith brought to a close, I have valorously pursued a type of inquiry for which he was distinguished and un-esteemed: the type, namely, which faithfully advances upon the candid assumption that great problems of man and of nature: of their origin and of their future fate, can be solved by reflection — by armchair meditation around whatever is staged upon the immense arena of life, of man, and of nature: the arena, indeed, of all that is known of universal progressive dynamism.

An intimate and venerated friend of mine, a philosopher of renown, once advised me: do not seek so many X's (unknowns). My own feeling is that, if we cease to seek for the X's, our search can be no real search at all; my feeling is also that the X's are, at least partially, unmasked by the empirical lead that directs us toward them.

Ab actu ad posse valet illatio.

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